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**CITY OF RIO VISTA
SOUTHEASTERN SOLANO COUNTY PLANNING
AREAS - CALIFORNIA**

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GENERAL PLAN 1990



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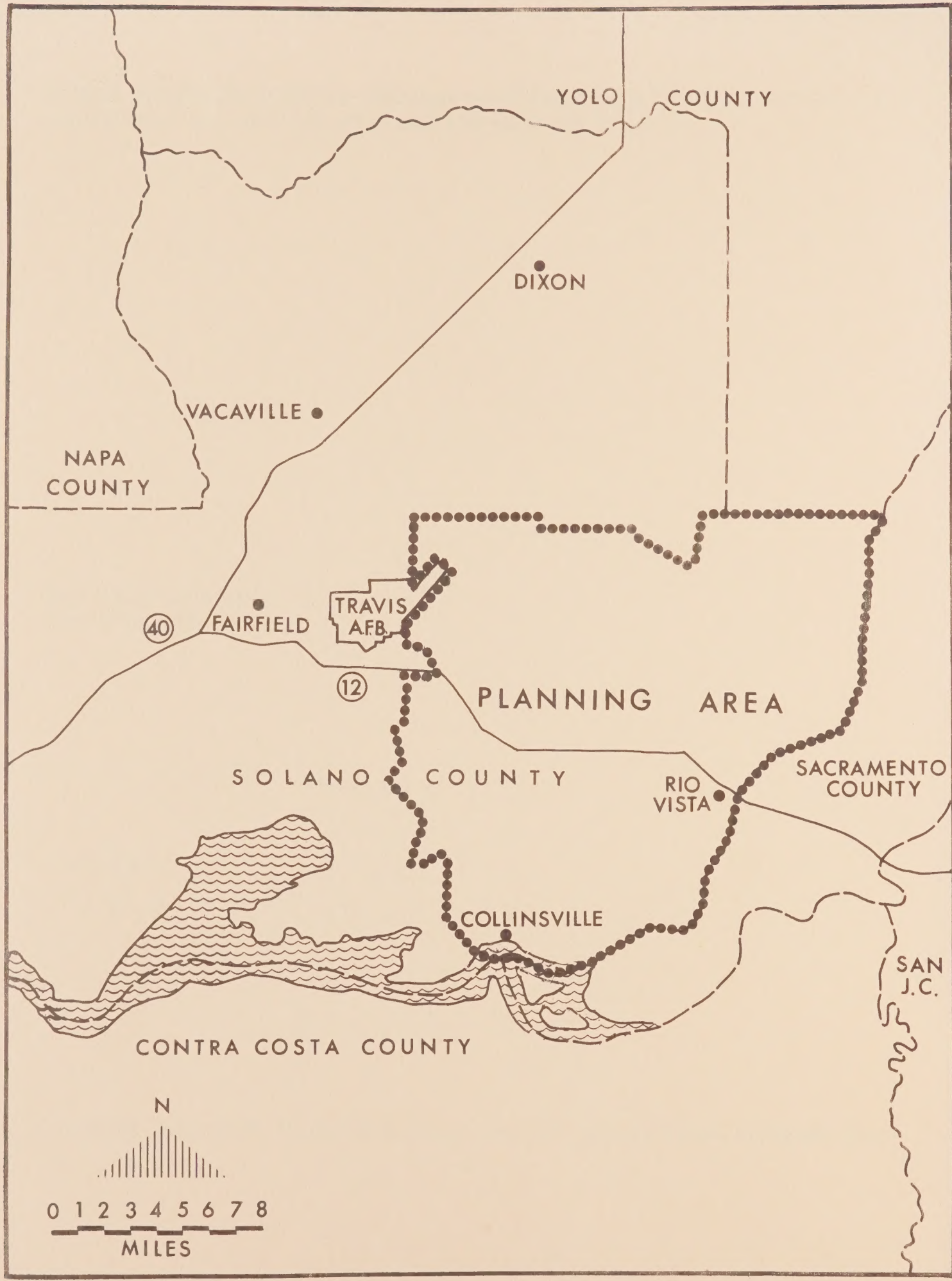
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CITY OF RIO VISTA - SOUTHEASTERN SOLANO COUNTY PLANNING AREAS
City of Rio Vista and Solano County Planning Commissions

GENERAL PLAN 1990
December 1973

[Rio Vista. Planning commission]
[Solano co. " "]
City pl. Rio Vista area
County pl. Solano co.

L KARL BARUTH ASSOCIATES, City and Regional Planners, Woodside, California





KARL BARUTH ASSOCIATES
CITY AND REGIONAL PLANNERS

139 FOREST VIEW ROAD, WOODSIDE, CALIFORNIA 94062, PHONE (415) 851-0530

November 27, 1973

The Board of Supervisors
Solano County
County Court House
Fairfield, Calif. 94533

The City Council
City of Rio Vista
City Hall
Rio Vista, Calif. 94571

Subject: City of Rio Vista - Southeastern Solano County Planning Program

Gentlemen:

We are pleased to submit the adopted General Plan Report for the Southeastern Solano County and the City of Rio Vista in accordance with our contract.

This report and the accompanying maps bring together in summarized form revised data and findings previously released for discussion in eleven interim reports. The opportunity of serving you in this vital capacity has been most enjoyable!

We express our appreciation to the eight Citizens' Committees, the Steering Committee, the County's and City's agencies and the many public and private agencies for their valuable participation in the development of this Report.

Respectfully submitted,

KARL BARUTH ASSOCIATES

Karl H. Baruth
Member American Institute of Planners
Fellow Royal Town Planning Institute (Great Britain)

KHB:jt

CITY OF RIO VISTA, SOLANO COUNTY, CALIFORNIA

City Council

Harry Alley, Mayor
James W. McPherson, Mayor Pro Tempore
David O. Jeffery
Manuel Cardoza
Milton Wallace

George E. Alphin, City Administrator

City Planning Commission

Raymond Donnelly, Chairman
Manuel Asta
Thomas McCormack
Norman Brown
Irving Leutholtz
Rex Smith
Bill Charlesworth

George E. Alphin, Secretary

Geraldine McCormick, City Clerk
Eugene C. Sylvia, Jr., Attorney
Carl Kelly, City Treasurer
W. L. Meikle, Engineer
Elger Vengley, Public Works Superintendent
William Woodall, Police Chief
Evan Buchanan, Fire Chief
Harry Alley, Civil Defense Director

SOLANO COUNTY, CALIFORNIA

County Board of Supervisors

Robert M. Scofield, Chairman
Wallace L. Brazelton
Richard Brann
Alfred C. Siegler
J. Ellis Godfrey

David Balmer, County Administrator

County Planning Commission

William Courtland, Chairman
James Moelk, Vice-Chairman
Stanley Anderson
Frank Cadenasso
Stanley Campi
Donna Lenzi
Ralph Moss
Andrew F. Siri
Hershel Wingfield (term expired September 20, 1973)
Jan Stewart

Milton Goldinger, Counsel
Eugene Knapp, Public Works Director
Gordon Gojkovich, Assessor
Dr. Edward Lopez, Health Officer

Blenden G. Nelson, Planning Director - Secretary (resigned November 3, 1973)

County Planning Department

Blenden G. Nelson, Planning Director (resigned November 3, 1973)
Charles Moore, Assistant Planning Director
John Madden, Planning Technician (resigned November 3, 1973)
Louis Esperance, Building - Zoning Inspector
Randall Kitts, Planning Aide
Jeanne Foley, Secretary
Rolla Ferguson, Clerk 3
Robert F. Johnson, Building - Zoning Technician

Eugene Knapp, Public Works Director
Dean Kastens, Parks and Recreation Director
Theron Clark, Airport Director
Gil Richardson, Civil Defense Director
Neil Crawford, Clerk
F. R. Henrekin, Industrial Development Agency Director
Lloyd A. Black, Agricultural Commissioner

CITIZENS' COMMITTEES

Steering Committee

Richard Brann, Solano County Supervisor
Stanley Anderson, County Planning Commissioner
Milton Wallace, Councilman, City of Rio Vista
Raymond Donnelly, Chairman, Rio Vista Planning Commission
George E. Alphin, City Administrator, Rio Vista

Citizens' Committees (alphabetically)

Agriculture and Industry

Albert Anderson
Elwood Anderson
Page Baldwin
E. F. Blackwelder
George Cattey
Clifford Dana
R. A. Dozier

Howard R. Gambill
Burrows F. Hamilton
David C. Hamilton
Victor Kroutch, Jr.
Kenneth Leutholtz
Thomas McCormack
L. M. McOmie

General Planning Policy

Arthur Azevedo
William Blacklock
Martin F. "Bud" Christensen

George Cruichshank
Shane Gearing
Michele Madere
Jan Stewart

Housing, Schools, Cultural and Public Facilities, Utilities, General New Town Discussion

Bryce Anderson
Grace Anderson
Robert Bard
Jo Brann
Edward J. Cereghino
Ron Dash

Kay Donnelly
Neil R. Hamilton
Lorelyn Hechtman
Iris Oglesby
Shirley J. Paolini
Ralph P. Rowe

Parks and Recreation, Open Space Lands. Rio Vista Recreation, Tourism and Marina. Joint Citizens' Committee for "Interim Open Space Plan".

Lou Aday (Rio Vista Horsemen's Association)	Greg Macedo
June Anderson	Helen McCormack
Bart Clyde	Judith McOmie
Marci Coglianese	Frances Riedmiller
Beatrice Dozier	Carla Rutz
Gay Felt	Kenneth W. Swett
Patricia Gates (Rio Vista Recreation Commission)	Sue Thue
Cindy Macedo	Ronald D. Thue

Physical Environment, History, Conservation, Seismic Safety, Safety

Rudolph Esperson, Jr.	Edward A. McBride
Paul J. Martin	Martin R. Rierson

Rio Vista Downtown Retail, Wholesale, Offices

Margaret Alphin	Braid Pezzaglia
Robert Augusto	Esther T. Pierce
Virginia Brown	Arthur C. Schafer
John Grilione	Leon Taylor
Howard R. Gambill	R. D. Trygstad
Arnold Jeffery	L. Weber, Jr.
Jere F. Larsen	Perry Wilson
Muriel Masztal	Laura Yorg

Transportation, Airports, Noise, Scenic Highways

W. Jack Bain	Ralph Farnsworth
John Donnelly	Loyal Hanson
	J. A. Turner

It is hoped that the above list contains no error or omission. These and many other citizens and agencies contributed unselfishly with ideas and time to this planning program. Many citizens attended also committee meetings as guests.

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PLANNING CONSULTANTS:

KARL BARUTH ASSOCIATES, Woodside, California

Karl H. Baruth, AIP, FRTPI, Project Director.

Associated Consultants:

Economics:	Kenneth Decker, Berkeley
Collinsville Harbor:	John A. Blume & Associates, San Francisco
Rio Vista Central Business District:	Harry J. Devine, Inc., Sacramento.

CHAPTER 1. INTRODUCTION

CHAPTER 2. CITIZENS COMMITTEES RECOMMENDATIONS

CHAPTER 3. BACKGROUND FOR PLANNING

CHAPTER 4. POPULATION AND ECONOMICS

CHAPTER 1. INTRODUCTION

AUTHORIZATION OF THE GENERAL PLAN PROGRAM

On March 21, 1972, the Board of Supervisors of Solano County jointly with the City Council of the City of Rio Vista, California, entered into an agreement with the firm of Karl Baruth Associates, Planners, to update and develop the General Plan for the Southeastern Solano County's and City of Rio Vista's Planning Areas to 1990 and to prepare a Central Business District study for Rio Vista.

The purpose of the study is to update the 16 years old General Plan for Rio Vista and Southeastern Solano County, including all mandatory elements for a General Plan as of January 1972,*to develop a comprehensive general land use guide to 1990 for the City and the remaining Southeastern Solano County area. Included will be consideration of the future Meridian Airport, other developments east of Travis Air Force Base, the possible industrial construction and other developments inclusive of a major steel plant in conjunction with a new deep water port at Collinsville.

The program is intended to cover the City of Rio Vista, as well as the unincorporated communities of Collinsville and Birds Landing, the development to the east of Travis Air Force Base, the development along the San Joaquin and Sacramento Rivers, and the fertile agricultural areas, as well as the extensive agricultural areas. The total planning area covers about 285 square miles.

* These elements are:

- Land Use,
- Circulation,
- Housing,
- Conservation,
- Seismic Safety,
- Noise,
- Scenic Highway,
- Open Space Lands,
- Safety.

The above elements have been prepared according to the preliminary guidelines issued for discussion on June 19, 1973, by the California Council of Intergovernmental Relations, Sacramento.

ACKNOWLEDGEMENTS

Special recognition is given to the citizens of the area who served on the committees. Their valuable suggestions and comments are greatly appreciated. In addition special thanks are due to the staff of the City of Rio Vista and to the Solano County agencies and their staff.

PURPOSE & SCOPE OF THE GENERAL PLAN

State Law currently requires that all cities and counties must prepare and adopt a General Plan consisting of the nine local plan elements. Four of the nine elements (seismic safety, noise, scenic highways and safety) are due at the latest one year following the adoption of the "guidelines" by the Council of Intergovernmental Relations or by September 1974.

This General Plan Report discusses the issues and presents the goals and the policies for effectuation as discussed with the eight Citizens' Committees over a timespan of 16 months.

A very extensive amount of different sources was used and they are all well documented in the 11 interim reports.

The maps do not intend to be accurate in the proposals and are not meant to be a commitment to a certain land use on a certain lot in the future.

The maps "Land Use and Circulation 1990" for the County and the City are the respective "General Plan 1990".

NOTES:

All dollar values in the tables and other parts of this report are 1972 values, if not mentioned otherwise.

If any of the assumptions made in this report are greatly altered, it may be necessary to revise the results of this study in the light of the changed conditions.

PREVIOUSLY ISSUED INTERIM REPORTS

1.	Citizens' Committees	April, 1972
2.	Interim Open Space Lands	June, 1972
3.	Existing Land Use	July, 1972
4.	Assumptions, Objectives, Principles and Standards	July, 1972
5.	Population and Economics	October, 1972
6.	Open Space Plan, Scenic Highways and Conservation Elements	December, 1972
7.	Seismic Safety, Noise and Safety Elements	January, 1973
8.	Land Use and Circulation Elements	March, 1973
9.	Housing Element	April, 1973
10.	Rio Vista Central Business District	May, 1973
11.	Preliminary General Plan, 1990	July, 1973

The reports are available in City Hall, Rio Vista, or at the offices of the County Planning Commission, Courthouse, Fairfield.

THE GENERAL PLAN

Planning is clearly recognized as a means to the end of more orderly development and consistent decision making. The means of planning are contained in its processes of research, study, citizens' input and recommendations, in order that the local jurisdiction's administrative and legislative machinery can more effectively determine desired development direction, matters of priority and emphasis and the allocation of resources and energies to the achievement of goals, the solving of problems and the taking advantage of opportunities.

Planning is not an end in itself. It is effective only to the extent that it serves the local government's decision makers.

Its effectiveness then, to a very large extent relies on the development and use of unequivocal universally understood and accepted, instruments of communication of policy and program.

The General Plan is one such instrument and communication. The Plan will not be effective unless (1) the means are found for institutionalizing its maintenance on a current basis so that it truly reflects current policy and is permitted to have an effect, and (2) it is used in relation with other instruments of policy (such as the annual operating budget) to guide development actions.

ADOPTION

This General Plan Report has been adopted by the Rio Vista City Planning Commission on October 10, 1973 and by the Rio Vista City Council on November 15, 1973.

The part related to Solano County has been adopted by the County Planning Commission on November 1, 1973 and by the County Board of Supervisors on November 27, 1973.

CHAPTER 2. CITIZENS COMMITTEES RECOMMENDATIONS

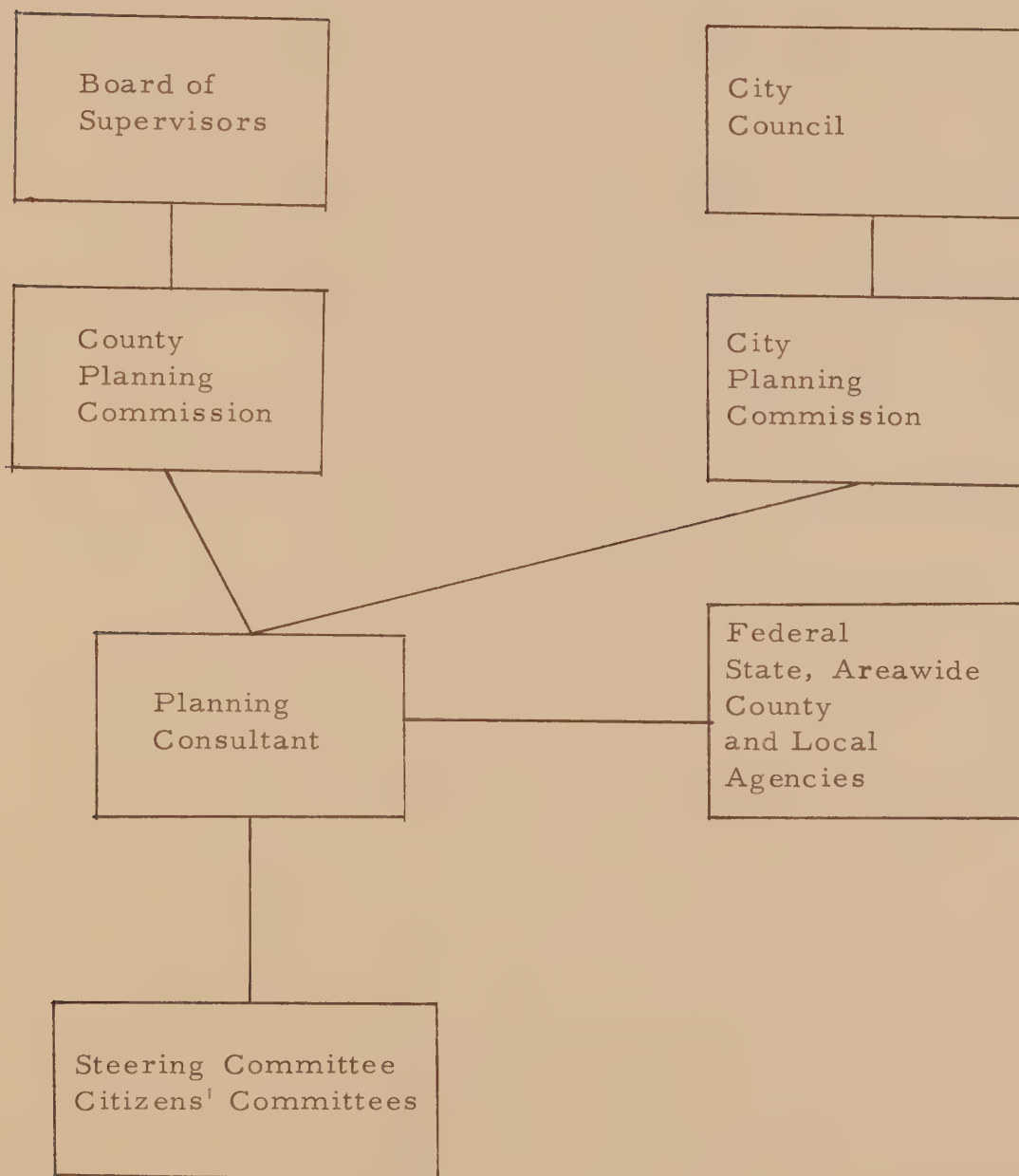
SECTION 1. FRAMEWORK FOR SOLVING SOME PROBLEMS OF THE AREA

The study of issues and problems concerning the City of Rio Vista and the Southeastern Solano County Planning Area had been assigned to several Citizens' Committees at the begin of the planning program. Since May 1972 the Citizens' Committees have been meeting regularly and analyzed the problems and discussed and recommended solutions. They are expressed through the formulation of goals and policies the citizens wished to accomplish in their City of Rio Vista and the Planning Area.

The problem solving is facilitated by this approach which discusses the issues, sets the goals and agrees on policies how to reach the goals.

The coordination of the Planning Program is shown in the accompanying diagram.

COORDINATION OF PLANNING PROGRAM
CITY OF RIO VISTA - SOUTHEASTERN SOLANO COUNTY PLANNING AREAS



SECTION 2. ASSUMPTIONS

In order to make long range forecasts, it is necessary to rely upon certain assumptions, as is always the case when future courses are evaluated. While the exact nature of the area's future to 1990 is not known, some reasonable assumptions can and must be made. They contain the potential for the areas's growth and must be reviewed regularly in the light of ever changing conditions. If the following assumptions would radically change, the General Plan would have to be changed accordingly. The following assumptions are basic for the formulation and design of the General Plan.

A. POPULATION

The increasing number of nuclear weapon countries will refrain from nuclear war of considerable magnitude because man will want to prevail.

The population in the City of Rio Vista and the Southeastern County Planning Area will continue to grow in numbers as assumed in the forecasts.

B. RECREATION

Recreation activities, owing to more leisure, will be increasingly more dominant in the social and economic aspects of life and accordingly recreation will become an increasing user of land.

Outdoor recreation as offered in the Delta and the Planning Area attracts visitors from the region and from even out of state. Local citizens are willing to receive recreationists and accept changing habits and styles, consistent with the balanced needs of local commerce and recreation objectives.

C. HEALTH

Life expectancy in 1900 was 46 years; in 1965 it was 67 and may increase to mid-70 by 1990.

The population of the area does not want to live with polluted air, rivers or sloughs.

D. EDUCATION

The median school years completed in Solano County have now reached 12 years and may increase to 14 years by 1990.

E. SOCIAL LIFE

Some change in family living, with emphasis on smaller families may slow down the area's population increase.

With highly standardized and perfectly organized methods of production - and greatly increased leisure time - more people will find their greatest life satisfaction away from the job.

F. CHANGES IN TECHNOLOGY

Educational methods via television leading to B. A. degrees will have an effect on the need for enlarging educational facilities, their sites, or building new ones.

Industrial land use requirements may change towards bigger sites and fewer workers per gross acre than presently. The rate of scientific and technological advance, effecting industrial production processes will continue at a high level.

G. ECONOMICS

Rio Vista and the Planning Area will be able to provide a variety of employment for a growing population, including the water-oriented tourist potential sector.

Many people from the San Francisco - Sacramento - Stockton metropolitan centers will own second homes or houseboats throughout the Planning Area and especially in the Delta area. They will spend their weekends or vacations there.

H. ENVIRONMENT

People in the Planning Area will be willing and able to retain the beauty of the landscape and the character of the waterways. They will be willing to pay for the prevention of visual, auditory, air and water pollution.

Greater awareness will exist for the need to study living organisms in their specific environment and their effects on each other. Adequate planning for fish and wildlife needs - also for recreation industry purposes - will be fully recognized.

I. MOBILITY

Rapid transit connection through the Planning Area (Travis Airport) will be constructed to connect the San Francisco and Sacramento Metropolitan areas before 1990.

Meridian Airport may be in operation for civilian air traffic in the later 1970's and will process about 6 million passengers annually by 1985, if constructed.

SECTION 3. OBJECTIVES AND PRINCIPLES

Objectives are thought of as broad and long-range goals aimed as a basis to guide in the planning process. The purpose of objectives is to state intent and action which benefits the people, business and government of the City of Rio Vista and the South-eastern Solano County Planning Area.

Principles, also often called Policies are statements of intent and desirable actions or controls needed to accomplish the established objectives.

Eight Citizens' Committees have been working on the General Plan formulation since the beginning of the Planning Program in March 1972. Also the Steering Committee met to review the Citizens' recommendations.

The Citizens' Committees are dealing with the following issues:

- A. Agriculture and Industry
- B. General Planning Policy
- C. Housing, Schools, Cultural and Public Facilities
- D. Parks and Recreation, Open Space Lands (Rio Vista)
- E. Parks and Recreation, Open Space Lands (County)
- F. Physical Environment, History, Conservation, Seismic Safety, Safety
- G. Rio Vista Downtown, Retail, Wholesale, Offices
- H. Transportation, Airports, Noise, Scenic Highways.

The recommendations are printed in original form and taken from Report 4 "Assumptions, Objectives, Principles and Standards".

A. AGRICULTURE AND INDUSTRY COMMITTEE

1. Scenic Route

Should recreation be excluded from the defined Collinsville area? It is felt that property owners would oppose public access to the river front through private lands and a "scenic road" along the river from Collinsville to Rio Vista.

a. L. M. McOmie:

In reference to provisions of Open Space he stated he did not want restrictions placed on his property to prevent him from the possible sale of land to industry. In reference to consideration of a scenic road from Collinsville to Rio Vista he felt that such a road would tend to hamper industrial development.

b. R. A. Dozier:

Stated his agreement with L. M. McOmie. Also stated he is opposed to public access to the river front through private lands. He sited the number of easements already existing on property now.

c. Albert Anderson:

Stated he wanted to continue to maintain his property for farming and was not interested in selling for industry or recreation.

d. It was moved by Kenneth Leutholtz and second by Elwood Anderson that the Committee oppose consideration of a scenic road from Collinsville to Rio Vista. Motion carried.

2. Zoning

It was moved by Elwood Anderson and second by Robert Dozier that the Committee recommend that the area commonly known as the Montezuma Hills area, that is to say, that area roughly bounded from Rio Vista west along Highway 12 to Shiloh Road thence south to Collinsville and then east to Rio Vista along the Sacramento River; that said area that is presently zoned Industrial remain so and that that area presently zoned A-20 remain so. Carried.

Committee Recommendations on Following Questions:

3. Should major areas of first class agricultural land be reserved for intensive agricultural use only? Yes.

4. Should contiguous areas for industrial uses be planned in excess? Yes. This could be provided for with exclusion from the open lands provisions.

5. Should the Sacramento River frontage in the Collinsville area be used for water-oriented industries only. Yes.

6. Should a good distance be kept from the riverfront to the industries to allow for recreation-oriented activities like fishing, hiking, etc. No. It was felt that industry would want access to waterfront.

B. GENERAL PLANNING POLICY COMMITTEE

1. Lack of transportation facilities is a deterrent to industry (e. g. bridges being out, no railroads, no four-lanes highway, etc.)

2. Further growth is invited because it seems inevitable. But in the immediate Rio Vista area we prefer controlled growth by a well defined zoning plan, both residential and commercial, commercial to be light industry or recreation oriented business.

3. We propose that all public lands along the Sacramento River, North and

south of Rio Vista, be in the immediate future developed for recreation with County and State and if possible Federal funds. Recreation to be composed of water oriented recreation, and camping and picnicking.

4. We believe that the city limit of Rio Vista should be extended to encompass the area that nearby future growth could utilize. Our city limits should be extended into our sphere of influence as growth requires.

5. Any industrial growth within a reasonable distance of the inhabited areas that might affect the residents because of pollution or any offensive odors, etc. should be north of Rio Vista because of our prevailing west winds.

6. To more clearly define the directional growth of the City of Rio Vista, we believe, at this time, that it would best be accomplished North along the Sacramento River to the fringe of the present development along River Road west to Liberty Island Road, South to Highway 12 (existing). This is dependent on the final route of the new Highway 12 to the new Rio Vista Bridge, which may bisect these boundaries. In choosing these Highway 12 boundaries we wished to preserve the Montezuma Agriculture Hills from residential development contingent in Rio Vista and to utilize flatter, poorer agricultural lands to the Northwest.

7. If Meridian Airport becomes a reality we recommend that a rapid transit such as BART be extended from Richmond to said Airport and further if necessary. This extension is to take precedence over the extension via Antioch.

8. This committee feels that the northern most possible Route (blue line or even further north) would be, by far, the best location for Highway 12. This is strongly unanimous.

9. It has also been discussed that the land on the waterfront along Front Street between Main and existing Highway 12, now occupied by Gordon Hansen Co., Dunns Automobile, Rex Smith Ford, Halliburton, Blackwelder et al, or some portion thereof could be purchased by the City of Rio Vista and developed as a Village Green. The private enterprises now there are outgrowing their facilities and could benefit by relocation - possibly along New Highway 12 or existing Highway 12. Most of the businesses located there now do not need or utilize the river commercially. This would open up a visually available River View (Rio Vista in Spanish) to enhance the entire character of the downtown area. Any alternative development of this property in the future should be strictly controlled by the City in order to insure the esthetic values are not destroyed.

10. Water, air and noise pollution should not be covered on the local level again, but left to the existing agencies.

11. We recommend that existing Highway 12 be zoned commercially to extend to the City limits boundaries.

12. We violently oppose the Peripheral Canal. We wish this duly noted.*

13. We recommend that the City Airport be relocated when the growth of Rio Vista makes it feasible.

14. We recommend that the recreation areas in the Northwest area of Rio Vista be developed by private enterprise as is now being done.

15. The present agricultural zoning Southwest of Rio Vista to the eastern boundary of the Collinsville Industrial Area be left intact.

16. We recommend an area of reasonable distance from Rio Vista be rezoned for medium density.

17. We recommend that the present Collinsville Industrial Area be left undisturbed but provisions be made for future Industrial zoning north along the present railroad only as development demands.

18. The majority opinion of those present favor the Meridian airport for the Travis Area when air travel warrants its existence. One dissenting opinion does not go along.

C. HOUSING, SCHOOLS, CULTURAL AND PUBLIC FACILITIES, NEW TOWN DISCUSSION COMMITTEE

1. We like a rural atmosphere.

2. Strict compliance to zoning ordinance.

3. Accept the goals established June 17, 1971 by the State Commission of Housing and Community Development:

a. To promote and insure the provision of adequate housing for all persons regardless of income, age, race, or ethnic background.

b. To promote and insure the provision of housing selection by location, type, price and tenure.

c. To promote and insure open and free choice of housing for all.

4. Community (City government) work closely with the school districts to insure land for eventual schools.

* (Consultant's note: Citizens are concerned that there seems to be no guarantee in relation to the salinity level).

5. Have predominance of single family dwellings with apartments added as needed considering duplex prior to multiple dwellings.

a. Future housing, developments have strict, specified maintenance requirements.

6. Let public know they are individually responsible for the maintenance of walks in front of private homes.

7. Community not appropriate for convalescent home (no hospital near enough, inadequate staffing).

8. We need a Community Clinic (Medical & Dental) that would be open 1 - 2 days per week in addition to Well Baby Clinic.

9. Public transportation.

10. Controlled growth - light industry within right zoning

a. non-polluting b. wires underground
c. non-seasonal industry d. total development plans.

11. Mobile home community

a. Mobile homes should be subject to a mobile home code.
b. Require sewer
c. Require an area for a park according to a certain number of lots or units.

12. We have the beginnings for a community center/ recommend a theater in the high school complex.

13. PLEASE - Do not put in the metro airport, use and develop the Sacramento Airport. Keep traffic patterns away from residential areas.

D. PARKS AND RECREATION, OPEN SPACE LANDS, RIO VISTA RECREATION, TOURISM AND MARINA JOINT CITIZENS COMMITTEE ON OPEN SPACE LAND (COUNTY AND CITY)

The two Open Space Lands Committees recommendations have been printed in Chapter 9 and 10.

F. PHYSICAL ENVIRONMENT, HISTORY, CONSERVATION, SEISMIC SAFETY & SAFETY COMMITTEE

1. The Committee made the following recommendations for the improvement of the visual appearance of Front St. from the Bridge to Logan St.

- a. Relocation of the cement plant
- b. Screening & landscaping of Koford trucking yard
- c. Screening of Dolk Tractor used equipment yard
- d. Installation of sidewalks on Front St.
- e. Improved screening & landscaping of Asta Construction Yard on East side of Front St.

2. Seismic Safety. Committee recommended School Board plans for rebuilding Riverview School take under consideration the close proximity of the newly discovered Rio Vista Fault. Committee recommends that the use of the area encompassing the fault be limited to recreation use as presently planned. Committee recommends City and County Planning Commissions and Rio Vista City Council zone earthquake fault area as "fault-line hazard zone". This information has been superseded by new information as described in the Seismic Safety Element.

3. Committee recommends historical area be established at site of Hastings Adobe in coordination with P. G. & E. multi-purpose use of land area.

4. Committee recommends spoil from dredging operations be deposited in areas where its use could be coordinated with City and County recreation plans.

5. Committee recommends last remaining growth of Native Bunch Grass located between Highway 12 and Lambie Road be preserved as a site of ecological interest.

G. RIO VISTA DOWNTOWN, RETAIL, WHOLESALE, OFFICES COMMITTEE

1. It was agreed that the planning area is generally defined as ranging from Front Street to the end of Main Street, flanked on one side by Logan Street from Front to Fifth Street and on the other side from Front to Second Street on Montezuma Street. Along Highway 12 to the approach of the Rio Vista Bridge and then back along Front Street.

2. Physical Improvements suggested by the members included paintings of older buildings, more convenient grouping of stores and sidewalk plantings of shrubs. Improving or else removing the deteriorating shops and buildings.

3. Undergrounding of electrical wires should be considered for the whole length of Main Street to greatly improve the appearance of the downtown area, to be realized by stages.

4. To make the Central Business District more attractive to potential customers it was suggested that there be more public parking, trees or shrubbery planted to enhance the area, provide benches so older people could rest if they needed to.

5. Also, most importantly, the addition of new business. A shoe repair store, a building supply store and even an old fashioned Ice Cream Parlor were mentioned as possibilities.

6. Since Lodi, Fairfield, Stockton and Concord are so easily accessible and have such diversified shopping, it was agreed by all present that our downtown area must be given new impetus in order to encourage our local residents to shop at home. Instead of having all stores closed by 5.30 P. M. each evening, it was felt by some that it would be to the merchants advantage to have maybe one evening per week when all or most of the stores would extend their shopping time to 9.00 P. M.

7. In order for Rio Vista merchants to capture their fair share of the market for citizens and recreationists it would seem to be necessary for them to have quality merchandise at competitive prices, have a good selection of merchandise and to do productive advertising to make people aware of what they have to offer.

8. Should the decision be in favor of the Travis Airport, the General Plan Policy Committee will follow our recommendations as to how many new residents we would and could accommodate. Most of the members present seemed to feel that a growth of about two thousand per year would be the possible maximum rate of growth. Everyone agreed that we were almost certain to experience an expanding of our community in any case. Many people prefer to live in this locality even though it means commuting to their places of employment. Rio Vista, Dixon, Fairfield, Vacaville and possibly Davis would all grow in size if the airport becomes a reality and a plan would be needed in order to maintain a population increase that would not cause great disruptions to any town.

9. Some feel that Rio Vista would have to grow before it can be improved. This might be achieved by a Light Industrial Park (River Road). That would encourage people to come to Rio Vista to live and improve business.

10. Rio Vista is zoned correctly for today's population.

11. A 4-lane Highway 12 through Rio Vista would cut the community in two areas and would not be desirable.

12. Wholesale trade does not fit into the downtown area.

13. A more convenient grouping of stores and sidewalk, planting of trees and benches would increase shopping pleasure.

14. A corporation should buy the waterfront property on Front Street from Main Street to the bridge and existing businesses should relocate. This whole area should be open and attractive to people coming into town (e. g. tourists) with a Sausalito type operation: Restaurants, shops, art gallery, etc.

H. TRANSPORTATION, AIRPORTS, NOISE, SCENIC HIGHWAYS COMMITTEE

1. Rapid Transit Extension via Fairfield

a. could easily be incorporated into new Highway 12 which would give access of Rio Vista not only to BART, but an intra-or inter-state system via possibly Interstate 5 or Route 99.

b. goes through more densely populated Richmond - Vallejo area which would also profit greatly from an extension to BART.

c. access of Meridian Airport to BART.

2. Bus Transportation

a. Service is not satisfactory for the time being.

b. Existing route should be used as a guideline for the industrial route. This would serve all Interstate 80 traffic which would come off the freeway at Fairfield and use this route.

c. If a route between Rio Vista and Collinsville should be built it should be a low-speed limit type scenic route built by the use of as little dynamite as possible. Road would follow contours of land and not be too wide and extravagant. There should be turn-outs for observation of places of interest.

3. Routes for Freeway 12

a. Either Route 2 (blue) or Route 3 (green) should be used (see sketch map prepared by Division of Highways).

4. We oppose the development of Meridian Airport. Future air traffic increase can be absorbed in the expansion programs of San Francisco, Oakland, San Jose and Sacramento.

5. Our Committee concurs with the General Planning Policy Committee in policy of new Highway 12 (the location should be the blue line or even farther north).

6. We do not recommend that a scenic route be constructed between Rio Vista and Collinsville. We recommend that the portion owned by the Government (between Delta Marina and across the river from the southend of Brannan Island) be zoned recreational and that the rest be zoned agricultural.

7. We recommend that when residential development nears the present airport should be moved to a place that would allow a further buffer zone for expansion.

CHAPTER 3. BACKGROUND FOR PLANNING

A. HISTORY

In the decade preceding the gold rush, Mexican Colonization of Northern California had extended quite far under General Mariano Guadalupe Vallejo. Through various combinations of force, negotiation, and friendship, General Vallejo was able to acquire large properties in the region north of San Pablo Bay, including the area we now call Solano County.

Chief Sem-Yeto, an Indian chief, became friendly with Padre Altimira, the Franciscan founder of the mission at Sonoma, "Francisco de Solano," and later made the acquaintance of General Vallejo. Chief Sem-Yeto became a Christian and was given the name "Solano" by the Franciscan Friars.

When the California Legislature, in the year after the gold rush, created the original twenty-seven California counties, the land of Sem-Yeto and his people passed into history and was named Solano County in their memory.

So the stage for Solano County's development in the second half of the 19th Century was set, when the county's unusually rich soil and mild climate steadily converted it, under man's hand, to a land famous as a fruit growing region.

As Solano County and its neighboring counties grew in the late 19th Century. Solano's contribution to the Bay Area economy included rock for San Francisco's buildings and city streets, fruit, cattle and feed, tomatoes, onions, sugar beets, pears, grains, alfalfa and asparagus from the rich Rio Vista area farm lands.

Rio Vista's history started in 1858, when it was founded by Col. N. H. Davis. This pioneer purchased a portion of the giant (17,752 acre) Los Ulpinos Mexican land grant from John Bidwell, the legendary Chico pioneer. Davis founded Rio Vista in 1858 at a site four miles upriver from the present location of the city, or at the junction of Cache Slough and the Sacramento River. The Cache Slough settlement was flooded in 1862 and the original settlers then moved to the present site. No remains at the original site remind us today of the first settlement.

Rio Vista was incorporated in 1894 and slowly grew as a farm center to 1,660 population within City limits by 1940 and about doubled by 1970. Today it is a farming and farm machinery center, an area rich of natural resources like natural gas fields and sand and a place with outstanding water-related recreational opportunities.

B. LOCATION

Solano County is part of the 9-County Bay Metropolitan Area and is located at the northeastern part, northeast of the San Pablo Bay.

Rio Vista is located in the eastern part of Solano County at the junction of the Sacramento River and State Highway 12, about halfway between San Francisco and Sacramento, and also halfway between Lodi and Fairfield.

C. PLANNING AREA

The minimal Planning Area of 285 square miles conforms with the Census County Division No. 3, Rio Vista described as follows: Hay Road, State Route 113, Brown Road, Brown Road extended, Cache Slough, Lookout Slough, Lookout Slough extended, County Line, Montezuma Slough, Norse Slough, State Route 12, Denverton Road, South Meridian Road, East Boundary Travis Air Force Base, Meridian Road. Influences beyond the minimal planning area will be taken into account.

The City of Rio Vista is located on the eastern border within the minimal Planning Area. The City's Planning Area of about 3 square miles is bordered by the 1973 city limits and the immediately surrounding lands. The "Spheres of Influence" cover about 10 1/2 square miles, 1973.

D. CLIMATE

The dominant factor that controls the climates of the San Francisco Bay Area is the area's proximity to the Pacific Ocean. The large scale atmospheric circulation is such that the path of air is almost invariably from the ocean, which has a tempering effect on the temperature.

The characteristics of a maritime climate of the coast fade rather quickly as one moves eastwards. The maritime air that reaches the environment of San Pablo and Suisun Bays must come either from the northwest, through the Petaluma Valley (a long over-land trajectory), or from the southwest through the Golden Gate.

The following data, showing the July mean temperature reflect the change in climate when moving eastwards towards the Central Valley.

TABLE 3-1 TEMPERATURE

Site	July Mean Temperature (F)
San Francisco	59
Richmond	62
Martinez	70
Fairfield	72 (66.2 City figure)
Rio Vista	72 (maximum 89, minimum 57)
Woodland	77
Sacramento	92 (based on a 30-year period)

Sources: Smog and Weather, BCDG, San Francisco 1967; California Statistical Abstract 1971, Sacramento 1972; Fairfield City Planning Department, 1972.

The average annual rainfall in the area is shown in the following Table.

TABLE 3-2 RAINFALL

Site	Normal Annual Precipitation (inches)
San Francisco	20.59
Fairfield	23.79
Rio Vista	16.00
Sacramento	18.34

Sources: Standard Industrial Survey Summary Reports;
California Statistical Abstract, 1971, Sacramento 1972.

Humidity conditions are shown in Table 3-3.

TABLE 3-3 YEARLY HUMIDITY, SELECTED PLACES SOLANO COUNTY

Site	Yearly Humidity %			Average	
	Maximum	Average	Minimum	January	July
Dixon	90	81	71		
Fairfield	66	61	55	74	56
Vallejo	94	71	24		
Rio Vista	82	51	53	67.1	40.9

Sources: See 3-2.

Snow is very rare in the County, the rainy season is anywhere between November and March.

The prevailing winds are tabulated in the following Table.

TABLE 3-4 WINDS

Site	Direction	Mean Hourly Speed (Knots per hour)
Dixon	North and Southwest	3-4
Vallejo	West and Southwest	7.7
Fairfield	West and Southwest	n. a.
Rio Vista	West and Southwest	9.2

Sources: See 3-2.

CHAPTER 4. POPULATION AND ECONOMICS - I. POPULATION

A. GENERAL SOCIAL AND ECONOMIC CHARACTERISTICS

This section considers statistics dealing with general social and economic characteristics as reported in the recent 1970 Census of population. The census was conducted on April 1, 1970. A total population of 169,941 persons for Solano County was counted. That figure has been revised by the census bureau to 173,600, owing to population changes in Vallejo. That revision is the basis for the following figures. The Southeastern Solano County Planning Area's population of 4,136 persons remained unrevised. All following data are compiled from the latest available U. S. Census Report PHC (1)-223, Washington D. C. , issued April 1972, if not otherwise mentioned.

The order of components in this section follows the U. S. Census report, 1972. Figures are shown for Solano County, Fairfield, Vallejo and the County balance, and separately for the Southeastern Solano County Planning Area. The population in the Planning Area is expected to increase almost 3 times to 1990, predominantly by in-migration. Therefore the existing population characteristics have hardly any impact on the future. Almost all depends on: Who comes.

1. Race

The 1970 Census provided for a division of people into White and Negro. For those who are interested in those categories, Table 4-1 shows the figures.

TABLE 4-1 CENSUS TABLE, SHOWING TWO RACIAL CATEGORIES, 1970

	Solano County Total	Fairfield	Vallejo	County balance	Southeastern Solano County Planning Area
All persons	169,941	44,146	66,733	59,062	4,136
White	144,864	38,651	52,212	54,001	4,012
Negro	16,656	3,296	11,101	2,259	3
Percent Negro	9.8	7.5	16.6	3.8	0.1

2. Age

The shifting age patterns in the 9-County San Francisco Bay Area are shown in Table 4-2. The population is undergoing constant change through the process of aging. In the Bay Area - as well as in the State and in the Nation - the long recognized "youth bulge" (the war babies) in the population is steadily becoming a

"young adult bulge". By 1980 there will be at least 200,000 more persons aged 15-34 in the Bay Area than today, even with zero population growth.

The age group of 15-34 will likely be the substantially greater number of in-migrants to the Bay Area, or to Solano County and the Southeastern Solano County Planning Area. Since the vast majority of population increase in the Planning area will be by in-migration, this age group should be used to estimate higher education facilities, housing and employment opportunities in the Planning Area.

TABLE 4-2 SHIFTING AGE PATTERN, SAN FRANCISCO BAY AREA 9-COUNTIES
1960/1970

	Under 5	5-14	15-24	25-34	35-44	45-54	55-64	65-plus	Total
1960	390,685	683,793	463,362	490,863	539,344	432,880	313,523	323,489	3,638,939
1970	366,571	870,229	818,945	661,640	551,507	552,605	398,878	407,824	4,628,199
% change	-6.2%	27.3%	76.7%	34.8%	2.3%	27.7%	26.8%	26.1%	27.2%

Source: U. S. Census, 1970, Reported in Bay Area Council "Research", October 1971 (partly text).

The shifting age pattern in Solano County over the last 10 years is illustrated in Table 4-3. Taking the 15-34 group as a whole, the young adult groups show a strong growth and the group over 65 years of age also. This is in conformity with the age fluctuations in the San Francisco Bay Area, although the 1960-1970 percentage change in the 15-24 group is slightly higher and the 65-plus group is lower than in Solano County.

TABLE 4-3 SOLANO COUNTY POPULATION BY AGE GROUPS 1960-1970 AND
1960-1970 PERCENT CHANGE

	Under 5	5-14	15-24	25-34	35-44	45-54	55-64	65-plus	Total
1960	17,001	26,628	20,896	19,811	19,515	13,621	9,205	7,920	134,597
1970	15,396	35,133	35,088	23,240	19,402	18,129	12,139	11,414	169,941
	-9.4%	31.9%	67.9%	17.3%	-0.6%	33.1%	31.9%	44.1%	26.3%

Source: Bay Area Council, U. S. Census, 1970

Although the 15-24 year group has increased 67.9% over 10 years, Solano County's population increased during the same time only by 'natural increase' with 19.7% and by in-migration with 6.6%.

Distribution of age in Solano County and in each City is shown in Table 4-4.

TABLE 4-4 POPULATION BY AGE GROUPS, 1970 - SOLANO COUNTY AND CITIES

	Under 5	5-14	15-24	25-34	35-44	45-54	55-64	65 and over	Total	Total over 20	Median age
Solano	15,396	35,133	35,088	23,240	19,402	18,128	12,139	11,414	169,941	99,771	24.3
Benicia	760	1,458	2,297	1,271	847	852	677	621	8,783	5,532	24.1
Dixon	430	991	760	575	523	498	310	345	4,432	2,511	25.1
Fairfield	4,169	11,221	9,769	6,715	6,127	3,625	1,404	1,116	44,146	23,274	21.4
Rio Vista	232	609	480	352	413	393	356	300	3,135	1,956	31.5
Suisun City	479	655	782	410	253	129	106	103	2,917	1,399	20.0
Vacaville	1,907	4,173	4,507	3,566	2,682	2,173	1,254	1,428	21,690	13,375	25.2
Vallejo	5,681	12,286	13,155	8,066	6,546	8,310	6,509	6,180	66,733	41,087	27.3
Unincorporated	1,738	3,740	3,338	2,285	2,011	2,149	1,523	1,321	18,105	10,637	25.5

Source: Compiled by San Francisco Bay Area Council. "Census Series" pp. 6, 9, 12, San Francisco, 1972.

TABLE 4-5 MEDIAN AGE, 9 SAN FRANCISCO BAY AREA COUNTIES

County	Median Age
Alameda	27.9
Contra Costa	27.4
Marin	29.5
Napa	32.0
San Francisco	33.9
San Mateo	29.4
Santa Clara	25.2
Solano	24.3
Sonoma	29.7
Total Bay Area	28.4

The City of Rio Vista has the highest median age in the County, followed by Vallejo. The youngest median age is in Fairfield, including Travis Air Force Base personnel. Further details can be seen in Table 4-2.

For comparison the median age of population in all 9 Counties is shown in Table 4-5. Solano County has the youngest population, owing to Travis Air Force Base personnel, followed by Santa Clara County.

Specifics of the Southeastern Solano County Planning Area are shown in Table 4-6. The groups 5-19 of age (school age) has about 10 percent more males than females. The age groups from 20 to 44 years has over 5 percent more females than males. Since the major population growth is expected to occur by in-migration, the importance of the birth rate component is minor.

Future needs for schools, housing and employment will be calculated on the San Francisco Bay Area population age pattern.

TABLE 4-6 AGE BY SEX, SOUTHEASTERN SOLANO COUNTY PLANNING AREA

Age	Male	Female
All ages	2, 090	2, 046
Under 5 years	157	149
3 and 4 years	66	56
5 to 9 years	207	180
5 years	39	35
6 years	40	40
10 to 14 years	206	186
14 years	40	33
15 to 19 years	198	189
15 years	52	47
16 years	46	48
17 years	49	40
18 years	28	25
19 years	23	29
20 to 24 years	112	131
20 years	22	22
21 years	25	28
25 to 34 years	214	242
35 to 44 years	274	259
45 to 54 years	264	262
55 to 59 years	130	132
60 to 64 years	120	108
65 to 74 years	136	121
75 years and over	72	87

3. Relationship to Head of Household

Persons per household is a significant figure to arrive at for the purpose of forecasting residential needs. From Table 4-7 it can be seen that Vallejo has the smallest number of persons per household in the County. The "biggest families" are in Fairfield. Rio Vista's number of persons per household is 2.94. For general planning purposes and for simpler calculations to 1980 and 1990 the number will be rounded off to 3.0 at this time.

TABLE 4-7 RELATIONSHIP TO HEAD OF HOUSEHOLD - SOLANO COUNTY, SOUTHEASTERN SOLANO COUNTY PLANNING AREA, 1970

	Total	Solano Fairfield	County Vallejo	Balance	Southeastern Solano County Planning Area
All persons	169,941	44,146	66,733	59,062	4,136
In households	160,577	40,611	64,694	55,272	4,104
Head of household	51,120	11,281	22,267	17,572	1,395
Head of family	42,412	10,089	17,515	14,808	1,144
Primary individual	8,708	1,192	4,752	2,764	251
Wife of head	37,255	9,025	15,007	13,223	1,051
Other relative of head	69,400	19,581	26,219	23,600	1,619
Not related to head	2,802	724	1,201	877	39
In group quarters	9,364	3,535	2,039	3,790	32
Persons per household	3.14	3.60	2.91	3.15	2.94

4. Type of Family and Number of Own Children

Table 4-8 shows that slightly over 90 percent of all families in Rio Vista are husband-wife families, a similar figure as in Solano County. Not all households contain families, because a household may be comprised of a group of unrelated persons or one person living alone. The Table also suggests that there are about three times more females living alone or with children than males in the Rio Vista area.

5. Marital Status

The persons classified in the 1970 Census have been married only once and those who remarried after having been widowed or divorced. Persons in common-law marriage are classified as married. Table 4-9 shows the Bay Area figures. About 58 percent are married, 6 percent divorced and 26 percent not married.

TABLE 4-8 TYPE OF FAMILY AND NUMBER OF OWN CHILDREN -
SOLANO COUNTY, PLANNING AREA, 1970

	Total	Solano County			Planning Area
		Fairfield	Vallejo	Balance	
All families	42,412	10,089	17,515	14,808	1,144
With own children under 18 years	24,774	7,140	9,077	8,557	593
Number of children	56,416	17,207	20,024	19,185	1,293
Husband-wife families	37,255	9,025	15,007	13,223	1,051
With own children under 18 years	21,193	6,280	7,449	7,464	539
Number of children	48,246	15,115	16,403	16,728	1,180
Percent of total under 18 years	80.4	84.0	76.3	81.7	86.3
Families with other male head	894	178	423	293	24
With own children under 18 years	415	116	174	125	14
Number of children	823	251	340	232	25
Families with female head	4,263	886	2,085	1,292	69
With own children under 18 years	3,166	774	1,454	968	40
Number of children	7,347	1,841	3,281	2,225	88
Percent of total under 18 years	12.3	10.2	15.3	10.9	6.4
Persons under 18 years	59,975	17,984	21,508	20,483	1,367

TABLE 4-9 MARITAL STATUS OF PERSONS 14 YEARS AND OLDER, 1970
TOTAL SAN FRANCISCO BAY AREA

9 Counties	Now married	Widowed	Divorced	Separated	Never married	Total
Persons	2,073,018	234,437	190,398	68,097	911,224	3,477,174

TABLE 4-10 MARITAL STATUS OF PERSONS 14 YEARS AND OLDER, 1970
SOLANO COUNTY AND CITIES

	Now married	Widowed	Divorced	Separated	Never married	Total
Solano	79,169	6,386	4,950	2,145	30,092	122,742
Benicia	4,145	345	288	131	1,780	6,689
Dixon	2,098	191	86	140	694	3,109
Fairfield	19,146	892	826	377	8,552	29,793
Rio Vista	1,652	137	73	24	469	2,355
Suisun City	1,253	68	101	88	316	1,826
Vacaville	10,612	681	688	238	3,782	16,001
Vallejo	31,362	3,476	2,456	1,072	11,584	49,950
Unincorporated	8,901	596	432	175	2,915	13,019

Table 4-10 shows Solano County and all Cities. About 65 percent are married, 4 percent divorced and 25 percent never married in Solano County. In the City of Rio Vista about 70 percent are married, 3 percent divorced and 20 percent never married.

Table 4-11 shows the marital status and sex in the Southeastern Solano County Planning Area. Total female and male population is evenly distributed. There are 59 percent single male and 41 percent single female. Of all widowed persons about 85 percent are female and of all divorced persons 45 percent are female.

TABLE 4-11 MARITAL STATUS BY SEX, 1970
SOUTHEASTERN SOLANO COUNTY PLANNING AREA

	Female	Male
Total, 14 years old and over	1,564	1,560
Single	263	372
Married	1,097	1,102
Separated	13	15
Widowed	156	27
Divorced	48	59

6. Nativity, Parentage and Country of Origin

The category "native" comprises persons born in the United States and outlying areas of the U. S. Persons of Spanish language comprise persons of Spanish mother tongue and all other persons in families in which either of the couple reported Spanish as his or her mother tongue.

Table 4-12 emphasized data for the 9-County Bay Area related to Spanish-American, non-white and total population. The Bay Area has 26.3 percent Spanish-Americans (12.7) and non-whites (13.6) population. In Solano County the percentage is 25.5 percent of Spanish-American (10.7) and non-whites (14.8). In Vallejo 30.0 percent of its inhabitants are Spanish-American (8.3) and non-whites (21.7).

TABLE 4-12 SPANISH-AMERICAN AND NON-WHITE POPULATION, 1970
9 BAY AREA COUNTIES, SOLANO COUNTY, CITY OF VALLEJO

Area	Spanish-American	Total Population	Percent of Population		
			Spanish-American	Non-Whites	Spanish-American and Non-Whites
9 Counties	589,971	4,630,283	12.7	13.6	26.3
Solano County	18,399	171,815	10.7	14.8	25.5
Vallejo	5,939	71,710	8.3	21.7	30.0

Table 4-13 shows the countries of origin in greater detail for Solano County and the Southeastern Solano County Planning Area. "Foreign stock" includes the foreign-born population and the native population of foreign or mixed parentage. Mexico and the United Kingdom equally show the highest figures for countries of origin, followed by Germany, Canada and Italy in Solano County. For the Southeastern Solano County Planning Area the 1970 Census reports in this classification a total of 288 persons more than the usual 4,136 total population figure. It would also be of interest to show the numerous population of Portuguese origin, a different culture and language than Spanish. Are they combined with "Spanish" or "all other" in the Census?

Apart from the Portuguese and Spanish-Mexican parentage, Canada provided the greatest number of "foreign stock" in the Planning Area, followed by Italy, Germany, Ireland and United Kingdom.

TABLE 4-13 NATIVITY, PARENTAGE AND COUNTRY OF ORIGIN, 1970 - SOLANO COUNTY, SOUTHEASTERN SOLANO COUNTY PLANNING AREA

	Total	Solano County Fairfield Vallejo Balance			Planning Area
All persons	169,941	44,146	66,209	59,586	4,424
Native of native parentage	138,657	36,351	54,493	47,813	3,511
Native of foreign or mixed parentage	22,659	5,691	8,543	8,425	694
Foreign born	8,625	2,104	3,173	3,348	219
Foreign stock	31,284	7,795	11,716	11,773	913
United Kingdom	3,356	1,249	1,125	982	29
Ireland (Eire)	824	239	347	238	31
Sweden	642	81	237	324	8
Germany	2,666	881	848	937	37
Poland	482	169	180	133	6
Czechoslovakia	215	106	51	58	-
Austria	415	133	201	81	-
Hungary	192	57	78	57	5
U. S. S. R.	596	101	259	236	19
Italy	2,407	359	1,165	883	87
Canada	2,429	634	868	927	118
Mexico	3,567	727	734	2,106	181
Cuba	108	-	74	34	-
Other America	564	270	151	143	7
All other and not reported	12,821	2,789	5,398	4,634	385
Persons of Spanish language	14,093	3,313	4,037	6,743	342
Other persons of Spanish surname	4,306	837	1,902	1,567	165
Persons of Spanish mother tongue	8,519	1,785	2,138	4,596	189
Persons of Puerto Rican birth or parentage	311	82	75	154	-

7. School Enrollment

This subject is considered in this Report below in the Land Use section.

8. Children ever born

This classification in Table 4-14 intends to establish the ratio between 1,000 women ever married between 35 to 44 years old and all children ever born. These data are here presented only to give the full range of social characteristics as collected by the 1970 Census. This information has hardly any impact on future population forecasts for the Planning Area.

TABLE 4-14 CHILDREN EVER BORN, 1970 - SOLANO COUNTY,
SOUTHEASTERN SOLANO COUNTY PLANNING AREA

	Total	Solano County			Planning Area
		Fairfield	Vallejo	Balance	
Women, 34 to 44 years old ever married	9,342	2,979	3,368	2,995	304
Children ever born	29,214	9,392	10,405	9,417	825
Per 1,000 women ever married	3,127	3,153	3,089	3,144	2,714

9. Residence in 1965

This subject is discussed in the Housing Element section of this Report.

10. Means of Transportation and Place of Work

This section refers to the chief means of travel to and from work and is discussed in the Circulation section of this Report.

11. Employment

This subject is discussed in the following section "Economics".

12. Income

Income data are discussed in the Housing Element section of this Report.

13. Housing

This subject is considered in the section Housing Element of this Report.

B. POPULATION GROWTH PATTERN AND FORECASTS TO 1990

1. Growth Pattern to 1972

The growth over the last 20 years is shown in Table 4-15.

TABLE 4-15 POPULATION GROWTH 1950 TO JULY 1, 1972

	1950	1960	1970	July 1, 1972
United States	151,325,798	179,323,175	203,235,298	--
State of California	10,586,223	15,717,204	19,972,173	20,524,000
San Francisco Bay Area (11 Counties)	2,681,322	3,638,939	4,630,073	4,761,100
Vallejo-Fairfield-Napa Metropolitan Area	151,436	200,487	250,955	266,800
County :				
Napa	46,603	65,890	79,140	84,400
Solano	104,833	134,597	173,600(7/1)	182,400
Yolo	40,640	66,400	92,200	96,100
Sacramento	277,140	510,300	637,500	668,100
San Joaquin	200,750	251,700	291,073	299,900
Contra Costa	298,984	413,200	558,100	583,400
City:				
Woodland	9,386	13,524	20,677	22,600
Delta Rural inc.	n. a.	8,578	7,532	--
Isleton	1,597	1,039	909	*
Walnut Grove**				785
Courtland**				600
Locke				1,002
Galt	1,333	1,868	3,200	3,597
Sacramento	137,572	191,667	257,105	--
Lodi	13,798	22,229	28,691	29,950
Stockton	70,853	86,321	109,963	116,700
Antioch	11,051	17,305	28,060	31,150
Pittsburg	12,763	19,062	20,651	21,650
Southeastern Solano County Planning Area (incl. Rio Vista)	--	4,760	4,136	--
City of Rio Vista	1,831	2,616	3,135	3,270

Latest Consultant's estimate for City of Rio Vista for July, 1973: 3,400 persons.

* All inhabitants evacuated during flood June 1972 and 600-650 inhabitants returned by July 1973.

** Consultant's estimates.

Sources: U. S. Census 1950, 1960, 1970

State Department of Finance, Sacramento, May 1972 and August 18, 1972.

California's 1970 population was up 27.0 percent from the 1960 figure, more than double the national growth rate of 13.3 percent. The Census counted 203,184,772 persons living in the United States as of April 1, 1970. California's growth in the 1960's is slightly slower than the growth in the 1950's, as shown in Table 4-15.

Between 1960 and 1970, the Bay Area's population increased by 27.2 percent, slightly higher than California's 27.0 percent growth. The region shared in the state's slowdown in population growth during the late sixties.

Between 1950 and 1960 Solano County added about 30,000 people and the population increased by another 39,000 persons by 1972. The greatest number of the growth went to Fairfield, followed by Vallejo and Vacaville.

The major cities related to Rio Vista in the surrounding counties show a strong growth.

Although Rio Vista is steadily growing, the Planning Area's small population decline is mainly due to the stoppage of importing of farm labor and also to the decline of Collinsville. In the past under 3 percent of the County's total population lived in the Southeastern Solano County Planning Area.

From end of last Century to 1940 the City grew in population at the average rate of about 2.2% per year and is estimated to have a resident population of about 3,400 persons by July, 1973.

2. Population Growth Forecasts to 1990

Expected growth for California and the Nation is assumed to be smaller than in the past.

In contrast to the State's population projections of September 15, 1971, the Association of Bay Area Governments takes another look at the Bay Area's population projections, although using the State's figures as the source.

ABAG prepared three series for each County: Slow, moderate and rapid, which are presented for Solano County at the bottom of Table 4-16.

The moderate or "base line" projection limits the overall Bay Area growth to just under 5.5 million residents by 1980, or about 1 million over the 1970 population figure. During the 1980's over 1.1 million residents are added and another 1 million residents during the 1990's. The moderate projection of ABAG is used by your consultant as a guideline to arrive at estimated population growth for Solano County and the Southeastern Solano County Planning Area.

TABLE 4-16 POPULATION PROJECTIONS TO 2000
 Counties and cities around Planning Area,
 Planning Area, Rio Vista Urban Growth Area

County & Selected City	1975	1980	1985	1990	1995	2000
Yolo County	103,900	119,000	137,100	155,600	174,500	194,200
Woodland		31,000		45-50,000		75,000
Sacramento Cy*	669,800	760,350	792,100	882,450	905,800	958,500
Delta Rural incl.						
Isleton, Locke)		7,160		7,160		
Walnut Grove)						
Courtland, etc.)						
Sacramento	n. a.	n. a.	n. a.	n. a.	n. a.	n. a.
San Joaquin Cy.	313,400	339,000	366,400	392,400	417,500	445,100
Lodi**	31,560	34,716	38,187	42,005	46,205	50,825
Stockton					201,163	
Contra Costa Cy.	616,600	689,100	772,300	852,400	921,100	988,700
Antioch(est.)	40,000	50,000	59,000	67,000	75,000	85,000
Pittsburg		34,900		39,700		45,100
Solano (ABAG)						
Rapid	191,800	222,800	n. a.	340,200	n. a.	517,300
Moderate	187,900	214,300	n. a.	303,100	n. a.	420,800
Slow	187,500	211,900	n. a.	261,500	n. a.	304,600
Southeastern Solano Cy.						
Planning Area excl. Rio Vista		1,750		2,500		
City of Rio Vista		4,900		9,000		
Total Southeastern Solano Cy.						
Planning Area		6,650		11,500		

* Preliminary General Plan 1990, Sacramento County, Sacramento 1972, p. 23 figures about 4% higher than State Department of Finance figures.

** City of Lodi Planning Department, 1971; received through Lodi District Chamber of Commerce.

Sources: Consultant's compilation from State Department of Finance, Sept. 15, 1971; ABAG, September 11, 1972; Cities' and Counties' General Plans.

Much of the projected Bay Area growth will occur in the now sparsely populated areas of the North Bay. This is due not only to the lack of land, but also to the undesirable living conditions in some metropolitan centers. However, growth will also occur in the more densely populated areas near the Bay. Careful planning efforts by various agencies will be necessary to ensure future livability and positive growth in the San Francisco Bay Area.

Solano County is expected to add about 125,000 residents by 1990 according to ABAG's moderate growth projections.

Expected growth of Counties and Cities around the Planning Area is considerable. Strong growth is expressed by the respective Counties and Cities in their official forecasts for the lands around the Southeastern Solano County Planning Area.

It is of interest to note that the population figure for Rio Vista by 1980 and 1990 would be near to 4,000 or near to 5,000 respectively, assuming a continuation of the general growth percentage since the 1940's.

The future growth of the Southeastern Solano County Planning Area and the City of Rio Vista has been the subject of the area's 1957 General Plan, projecting a population of 8,000 persons by 1975, including the City with 4,000 to 5,000 persons (4,500). The Area Plan is now being updated and this General Plan report is part of the Southeastern Solano County Area Planning Program. It is now assumed that the total Planning Area population will be 6,650 and 11,500 by 1980's and 1990's respectively as shown in Table 4-16.

CHAPTER 4. POPULATION AND ECONOMICS - II. ECONOMICS

The following presents a series of profiles of the main economic activities that make up the Planning Area's economic composition. The general and broad overview of existing industrial and commercial structure - and potentials to 1990 - is geared to the purpose of this planning program only.

A. INDUSTRY GROUPS

1. Agriculture is one of the most important activities in Solano County. Dollar value of agricultural production in Solano County steeply increased during the last 20 years. Total acres in farmlands reached about 370,000 acres, of which about 150,000 acres are irrigated farms. Truck and seed crops acreage increased and field crops decreased. Animal production is on the decrease over the years. Table 4-17 illustrates the changes.

TABLE 4-17 AGRICULTURAL PRODUCTION SOLANO COUNTY 1950 - 1971

Year	Fruits & Nut crops	Truck Crops	Field Crops	Animal Production	Seed Crops	Total
1950	\$6,813,033	\$2,148,623	\$9,749,189	\$10,302,443	\$269,348	\$29,282,636
1961	7,136,000	5,357,600	12,397,000	8,470,790	232,070	33,593,460
1965	7,390,400	8,704,000	19,102,500	12,978,000	366,100	48,541,000
1970	8,234,300	8,029,600	23,218,900	9,135,000	816,700	49,434,500
1971	7,890,000	10,653,200	25,002,100	8,292,100	723,800	52,561,300
CLASSIFICATION OF ACREAGE 1950, 1971						
Classification				1950	1971	
*Fruit and Nut Crops				18,837	18,925	
Truck and Seed Crops				7,269	19,019	
Field Crops				127,915	122,196	
Pasture Land				256,800**	175,300	
Urban and Other				66,143	72,900	
Marsh Land				52,000	52,000	
Water				39,040	34,750	
Brush				15,000	14,000	

* Includes non-bearing acreage ** Includes fallow land.

Source: "Agricultural Crops Report 1971", Solano County Department of Agriculture. 1972, p. 7.

The Southeastern Solano County Planning Area is not specifically separated in the County's annual agricultural crops reports. It is estimated that about 75 percent of the County's sheep raising and about 40 - 45 percent of the County's grain is grown in the Planning Area. This is a very high percentage of the County's agricultural output, since the Planning Area is about 1/3 of the total County's land area.

The eastern part of the Planning Area around Ryer Island now produces grains, pears, milo, some alfalfa, sugar beets and tomatoes. The northern part of the Planning Area is used for pasture. The Montezuma Hill area produces now different grains like barley, wheat and few oats. Some pasture is mixed in the hills with important sheep range lands.

2. Mining

a. Gas

The United States and other industrialized nations' style of life consumes vast amounts of power sources which are not being replenished. Many ideas are discussed now of new power sources like trapping molten rock deep in active volcanoes (geothermal energy), collecting the sun's heat, using the ocean's waves or the winds, by controlled thermonuclear fusion or by burning garbage. Natural gas is not being developed in the United States at rates sufficient to meet projected demands. These demands are illustrated in the following Table.

TABLE 4-18 U. S. DEMAND FOR NATURAL GAS

Unit	1970	1985	2000
Billion cubic feet	21,847	38,200	49,000
Trillion Btu*	22,546	39,422	50,568
Percent of gross energy input	32.6	29.5	26.0

Source: U. S. Department of the Interior, 1972. *British thermal unit.

The known natural gas reserves in the United States to 1985 are about 1/3 less than the expected requirements. In order to try to meet the growing demand, gas is imported in ever increasing amounts. The United States is importing gas from Canada to Lybia.

The total natural gas output in California reached the quantity of 677,689 (in million cubic feet) at \$207,440 (value in thousands). Solano County is providing about 12 percent of the badly needed natural gas output in California.

Solano County's natural gas output by 1961 was number 5 in California and is now number 4 after Kern, Los Angeles and Santa Barbara Counties, in that order.

TABLE 4-19 NATURAL GAS OUTPUT SOLANO COUNTY

Year	Quantity (In million cubic feet)	Dollar Value (In thousands)
1961	39,953	11,129
1963	44,933	13,165
1966	48,584	15,498
1969	56,616	16,702
1970	60,686	20,130
1971	85,291	30,637

Source: California Statistical Abstracts 1967, 1971, 1972.

Gas fields in Solano County are mostly concentrated in the Southeastern Solano County Planning Area and specifically to the east and south of the City of Rio Vista. By 1970 Solano County had 177 dry gas producing wells with a potential of 226. The acreage was 18,248. Future gas drilling activities are bright. As an example, Rio Vista gas had 167 actual producing wells in 1970 and 221 potential wells. The gas reserves for this field are estimated on December 31, 1970, to be 529,413,581 (Mcf). Until that date the gas (Mcf) net withdrawn amounted to 79,666,337.

At the existing rate of withdrawal the gas reserves will be depleted by around 1980 and an important economic base will be lost if not new gas resources are found.

Operators of the gas fields in the Planning Area which started more than 30 years ago are (alphabetically)

Amerada Hess Corporation
 Atlantic Richfield Corporation
 Quinton R. Greenfell
 Shell Oil Corporation
 Signal Oil & Gas Company
 Standard Oil Company of California
 Texaco Incorporated
 Union Oil Company of California
 and others.

The intensive gas drilling east and south of Rio Vista seem to consolidate also the existing land use for this area to 1990. Gas fields and gas extraction fit very well with the existing agricultural land use.

b. Oil

Consumption in the nation is increasing at a greater rate than is now being supplied for by domestic production. In 1970 the United States consumed oil products at an average rate of 14.7 million barrels a day. Petroleum comprised 43 percent of our national energy supply.

In 1971 there are 27 companies refining crude oil in California at 35 refineries, having a combined capacity of 1,560,000 barrels per day, that is about 1/2 million barrels over the 1968 California production.

There are 6 oil refineries in the San Francisco Bay Region, all located in the North Bay Area. The Humble Oil and Refining Company operates a facility in Benicia, built in 1969. The other 5 refineries are located between Richmond and Martinez area along the deep-water access route.

Bay area refineries receive most of their crude oil by ship from Southern California, Alaska, South America and the Middle East - and are, therefore, still dependent on a coastal location from deep-water access. There is no crude oil output in Solano County; southern California provides the bulk of California's crude oil.

The new oil fields on the Arctic slope of Alaska will ship their crude oil south. Excellent prospects exist to receive those crude oils for refining in the North Bay area which are not shipped to the increasing number of Washington or Oregon refining facilities.

Suitable sites, big enough to accommodate a refinery with deep water access, are hardly available in the North Bay, with the exception of the greater Collinsville area. A refinery site should be several thousand acres in order to provide a buffer zone for unavoidable smells emitted from the plant. Since the nearest residential area (Rio Vista) is about 10 miles from Collinsville and since wind conditions are also favorable, the Collinsville area has a potential for a refinery location. This is only acceptable after the stringest air-pollution controls are enforced by the Bay Area Air Pollution Control District and other environmental impacts are controlled.

c. Sand

The sand and gravel output in California increased from 124,655 Mtons in 1969 to 132,232 Mtons by 1970. Value reached 163,414,000 dollars. By 1971 145,139 Mtons have been produced at a value of 180,574,000 dollars. The sand and gravel production in Solano County in 1970 reached 6,283,000 short tons at a value of \$2,617,000.

Minor sand deposits are located east of the Rio Vista Municipal Airport and south of town. The deposits consist of spoil from the dredging operation by the U. S. Corps of Engineers to keep the Sacramento Deep Water Channel to certain navigable depths

and widths. The amount of sand available is limited to the amount deposited by the U. S. Corps of Engineers. Until now, all the sand deposited has been moved away for use in other locations. Sand use is in the increase and seems to be an expandable product.

There is no gravel production in the Southeastern Solano County Planning Area at this time.

3. Construction

Construction is comprised of three major categories of enterprise. They include general building contractors, heavy construction contractors and special trade contractors.

In the Southeastern Solano County Planning Area construction is concentrating on gas well related activities and also on road construction.

The outlook is for strong activities in the three construction categories owing to expected population increase in need for housing and related facilities. Heavy construction is expected in the greater Collinsville area and north along the railroad -- freeway transportation corridor. Special trade contractors will be concentrating also on the ever increasing needs for gas well related activities.

4. Manufacturing and Non-Manufacturing

a. Existing industries

The existing industries in the Planning Area are concentrated in and around Rio Vista. The impressive list of manufacturing enterprises include the Blackwelder farm machinery and detachable waste collection systems, manufacture of special equipment and contract metal fabrication. The Amerada - Hess Corporation is active in natural gas and condensate production and Standard Oil Company of California and other companies are concentrating on gas production as described in greater detail earlier in this Chapter.

The gas industries are aided by Halliburton Services and Hunnicutt & Camp Drill Company oil and gas well drilling, cementing, testing and other related services.

The dredging work for the Sacramento deep water channel is also provided locally by the Olympian Dredging Company and Dutra Dredging.

b. Industrial growth potential

In addition to the potentials described above under 1. agriculture, 2. a. gas and 2. b. oil, a review is presented in the following of some manufacturing and non-manufacturing industries, which have shown the greatest growth in dollar

value of shipment during the recent past. The growing industries are those which may most probably be locating new plants and do represent therefore a prime factor of the Planning Area's development potential. The information is presented in form of a Table.

Table 4-20 is for general references and shows the two-digit Standard Industrial Codes for major industry groups and their approximate percent increase. According to this Table it seems reasonable to assume that with the exception of Industry Groups 21-24 and 26, all other types of manufacturing industries could potentially locate new plants in the Planning Area. The 5 remaining industry groups are those which showed a decline in dollar value of shipment or are raw-material based industries like Tobacco, Lumber and Wood or Paper Products, and others.

The growth of the industry groups has been checked against other research data, listing five growth categories: very high growth, high, moderate, static, declining. Furthermore the Table has been compared with U. S. growth pattern in the decade between 1958 and 1968. In both cases the Table 4-20 has been found reasonably applicable for the purpose of this planning program.

The additional Table 4-21 presents only selected industries and shows the four-digit Standard Industrial Code. This Table presents the present increase of dollar value shipment and contains also projected growth to 1980.

Industrial projections to 1980 in manufacturing favor instruments and related products and especially general machinery and tools as illustrated in the above mentioned Table. It should be noted that there are many more and different industrial enterprises which may find the Planning Area suitable for location.

The specific purpose of the consideration of industrial potential is for land use planning purposes only, as related to industry group employment per acre and impact of type of industrial production on environment.

c. Generalized industrial land requirements

Manufacturing and Non-Manufacturing

The figures presented here are for overall planning purposes only and will be modified by many factors some of which escape statistical certainty. When projecting industrial uses into the future, one cannot predict exactly what type of new industries may develop. Other changes such as transportation techniques and trends in plant design will affect future industrial uses and the size of industrial sites.

TABLE 4-20 MAJOR INDUSTRIAL GROUPS AND ESTIMATED INCREASE
IN DOLLAR VALUE SHIPMENT. UNITED STATES

SIC* Code	Major Industry Group	Estimated Percent In- crease 1971 to 1972 of Dollar Value of Shipment
20	Food and kindred products	1 - 9
21	Tobacco manufactures	1 - 3
22	Textile mill products	n. a. **
23	Apparel and related products	n. a.
24	Lumber and wood products	7 - 29
25	Furniture and fixtures	7 - 9
26	Paper and allied products	4 - 8
27	Printing and publishing	4 - 10
28	Chemicals and allied products	3 - 9
29	Petroleum and coal products	n. a.
30	Rubber and plastics products, n. e. c. ***	0 - 9
31	Leather and leather products	3 - 7
32	Stone, clay, and glass products	7 - 16
33	Primary metal industries	10 - 16
34	Fabricated metal products	from minus 9 to plus 15
35	Machinery, except electrical	3 - 28
36	Electrical machinery	from minus 2 to plus 8
37	Transportation equipment	from minus 7 to plus 7
38	Instruments and related products	5 - 16
39	Miscellaneous manufacturing	3 - 9

* Standard Industrial Classification

** Not available

*** Not elsewhere classified

Source : U. S. Department of Commerce, Washington D. C. , 1972, p. 3;
"Growth and Labor Characteristics of Manufacturing Industries";
"U. S. Industrial Outlook 1972 with Projection to 1980";
U. S. Department of Commerce, Washington D. C. , 1972, pp. 409-411.

TABLE 4-21 PERCENT INCREASE OF DOLLAR VALUE OF SELECTED
MANUFACTURING AND NONMANUFACTURING INDUSTRIES,
1971 - 1972 AND PROJECTIONS TO 1980 - UNITED STATES

Rank	SIC* Code	Industry Description	Percent Increase of Dollar Value of Shipment 1971 to 1972	Estimated Percent Increase 1971 - 1980**
1	3541	Machine tools, metal cutting types	28	12.6
2	3542	Machine tools, metal forming types	17	9.2
3	3841	Surgical and medical instruments	16	15.8
4	35451	Metal cutting tools	16	12.4
5	3433	Heating equipment, except electric	15	6.9
6	3432	Plumbing fittings and brass	15	7.4
	3312)			
	3315)			
7	3316)	Steel mill products	14	6.0
	3317)			
8	3431	Metal sanitary ware	14	5.6
9	7299	Miscellaneous personal services	13	5.3
10	501	Motor vehicles and automotive equipment	12	15.0
11	5311	Department stores	11	9.3
12	7221	Photographic studios	11	9.9
13	2751)	Commercial printing	10	8.2
	2752)			
14	508	Machinery equipment and supplies	10	8.0
15	3441	Fabricated structural steel	10	6.4
16	3544	Special dies, tools, jigs, and fixtures	10	3.3
17	3323	Steel foundries	10	6.0
18	3642	Lighting fixtures	10	9.9
19	3531	Construction machinery	9	4.1
20	3494	Valves and pipe fittings	9	8.2
21	3941	Games and toys, dolls, children vehicles	9	5.5
22	2087	Flavorings, extracts and sirups	9	8.6
23	3536	Hoist, cranes, and monorails (3534-37)	9	8.5
24	3613	Switchgear and switchboard apparatus	8	6.7
25	2022	Cheese, natural and processed	8	7.6
26	2511	Wood household & bedding furniture (2512, 14)	8	6.3
27	2844	Perfumes, cosmetics & other preparations	8	8.0
28	3533	Oil and gasfield machinery	8	5.8
29	3623	Welding apparatus (electric)	8	7.4
30	2791	Typesetting	8	8.0
* Standard Industrial Code			** Compound annual rate of growth	

Sources: "Growth and Labor Characteristics of Manufacturing Industries"
U. S. Department of Commerce, Washington D. C. , 1972, pp. 408, 409, 412
and end of chapters 6-31 for 1980 figures.

Furthermore the full impact of automation and new production techniques and shipping processes may greatly decrease the number of employees per gross acre.

On the basis of the above the following rounded-off range of figures will serve as a rule-of-thumb guide for general overall planning purposes only.

TABLE 4-22 EMPLOYMENT DENSITY

Industry	Range of Employees per Gross Acre (Depending on size and organization of enterprise)
Food and kindred products	15 - 20
Textile and apparel products	25 - 35
Furniture, lumber and wood products	10 - 15
Printing, public and allied products	45 - 45
Chemicals	3 - 5
Stone, clay and glass products	8 - 10
Non-electrical machinery	12 - 18
Electrical machinery	20 - 25
Ordinance and aircraft	30 - 35
Miscellaneous durables	12 - 15
Miscellaneous non-durables	12 - 15
Steel	1 - 2
Oil Refinery	1 - 2
Nuclear Power Plant	.03 -.05

Source: Consultant's compilation of various estimates 1972.

5. Electric Power Generating

In response to our style of life, rather than due to increases in population, demand for electric power is rising at a rapid rate. Between 1950 and 1960 the production of energy more than doubled and between 1960 and 1970 production again doubled, reaching about 120,000,000 kilowatt - hours in California. Demand in many areas still overloads electric plants and the familiar "power failure" in some areas is the result. Shortage of electricity is not a local phenomenon but has country-wide dimensions.

Recent estimates from power industry sources indicate the most promising way to meet the booming demand for electrical energy may be by a major commitment to nuclear power stations, using water power to drive turbines. Currently nuclear power produces 3.4 percent of the electrical energy, and is expected to produce 22 percent of capacity in 1980 and about 45 percent in 1990. California figures are believed to be similar or in excess of these proportions.

Pacific Gas and Electric Company acquired a site near Collinsville with the plan to build a nuclear power plant. The power plant may be in operation in the 1980's.

6. Steel

The National Steel Corporation acquired a large tract of land in the Collinsville area for future construction of a Steel plant. The construction date depends - amongst others - on the degree of demand for steel and steel products and on the Government control of import penetration. There are three Steel Plants in the North Bay area, the Kaiser Plant in Napa County, Bethlehem Steel in Richmond and U. S. Steel in Pittsburgh.

Ten years ago the United States was number one in output of raw steel with 98 million tons. followed by U. S. S. R. with 78 million tons and Japan with 31 million tons. Now the U. S. S. R. produced 132 million tons, U. S. 120 million tons, very closely followed by Japan. It is predicted by some that American steel consumption may rise, and even approach 1 billion tons by 1980 in an ever growing worldwide consumer market. Realization of such a prediction may make the Collinsville steel plant a reality.

7. Transportation

The subject of Transportation and Circulation is discussed in the Circulation Element of this report.

8. Environmental Concern

The maintenance of the environment is legislated now in regards to noise air quality, water quality, waste disposal and other measurable "public health " concerns.

The following remarks are only general and are directed only towards some industries and are touching only on some of the environmental considerations. It is up to the respective industries to prepare the environmental impact reports at the time of application.

a. Steel

With the acquisition of a major tract of land in the Collinsville area by the National Steel Corporation, the construction of a steel plant must be taken into account. The major problem in the steel industry performance is air pollution. Installation of air pollution control equipment should not represent any problem at all in new installations. The area for the steel plant is under the control of the 'Bay Area Air Pollution Control District' and the restrictions are quite stringent.

A factor of great importance in the planning of the site for the National Steel plant near Collinsville is the visual impact, since the site borders along the Montezuma Slough for about 5 miles. The Slough, along the steel plant site, represents the boundary between the extraordinary valuable resource, the Suisun Marsh, and the water-related industry. The Slough is used for boating and fishing by a great number of recreationists. The site also has a 1 mile frontage along the Sacramento River. Both Montezuma Slough and Sacramento River - as well as the Delta - are proposed as protective waterways.

b. . Petroleum

Environmental problems in relation to oil refining and petrochemicals include:

(1) Visual Effects

These are usually serious and negative, though unquantifiable. An oil refinery is too large to camouflage effectively and its visual intrusion can be profound.

(2) Effects on Air

Air pollution is the most obvious and detrimentally negative impact associated with oil refining. The recently introduced stringent controls by the Bay Area Air Pollution Control District is trying to ease the air pollution (odors) problem. The nearest population center within the prevailing wind direction from the Collinsville area is now about 10 miles away and no population centers along the Sacramento River, south of Rio Vista are planned.

(3) Effects on Water

There are two types of potential pollution of water: pollution associated with the daily operation of the plant (waste water) and secondly the occasional oil spills due to ship accidents. Waste water pollution need not be a problem and the newly formed Bay Area Sewer Service Agency will strictly control industrial waste water. More difficult to solve are the problems of occasional oil spills damaging marine ecology or public enjoyment of shore and beaches.

c. Electric Power Generation

The Pacific Gas and Electric Company plant at Collinsville would be subject to the U. S. Atomic Energy Commission controls. Furthermore the State of California through the Resources Agency defined objectives and principles regarding the location and operation of power plants.

All the above mentioned polluters can be minimized by strict control and proper design.

B. TRADE (RETAIL AND WHOLESALE)

1. Retail Trade

No retail sales data are available for the Southeastern Solano County Planning Area as such, but only for Solano County as a whole and the cities separately. There is only one minor retail outlet in Birds Landing at this time and no major retail outlets are planned in the Planning Area with the exception of "Meridian Airport related commercial" at Fairfield.

Retail trade will be discussed in the Chapter dealing with the Rio Vista Central Business District plan.

2. Wholesale

The only operating type of wholesale trade in the Southeastern Solano County Planning Area might be related to farm products. Although there are no data available of existing wholesale trade activities within the Southeastern Solano County Planning Area or the City of Rio Vista, forecasts are attempted to 1980 and 1990.

3. Wholesale Trade Forecasts.

The future figures will be derived from the ratio of wholesale employment to population. According to the U. S. Census of Business, 1967, the State's ratio is 20 employees to 1000 population. The Solano County average is 3 employees per 1000 population by 1960 and 4 employees per 1000 population by 1970, which is considerably under the State's average. It can be assumed that in the future more emphasis will be placed in the Southeastern Solano County Planning Area to serve as an industrial and/or agricultural market and distribution center, thus bringing the ratio conservatively higher to 7 : 1000 by 1980 and 9 : 1000 by 1990.

A generally agreed upon figure of relationship between wholesale employees and acreage is 30 employees per acre for general planning purposes. The exact size will depend on the organization and size of enterprise. Establishments are assumed to be evenly divided between the Southeastern Solano County Planning Area and immediate Rio Vista urban area, as shown in Table 4-22.

TABLE 4-22 ESTIMATED LAND REQUIREMENTS FOR WHOLESALE TRADE, 1980, 1990, Southeastern Solano County Planning Area, City of Rio Vista

	1980		1990	
	Southeastern Solano County Planning Area	Rio Vista	Southeastern Solano County Planning Area	Rio Vista
Number of employees per 1000 population		7		9
Number of employees	12	34	22	81
Additional land needed (acres)	1/2	1	1	3

Source: Consultant's compilation.

TABLE 4-23 SERVICE ESTABLISHMENTS, 1971, SOLANO COUNTY

	Number of employees, mid-March pay period	Taxable payrolls, Jan.-Mar. (\$1,000)	Total report- ing units	Number of reporting units by employment-size class				
				1 to 3	4 to 7	8 to 19	20 to 49	50 to 99
Hotels and other lodging places	153	94	44	31	11	1	1	-
Hotels, tourist courts, and motels	115	63	27	17	8	1	1	-
Trailer parks and camps	28	25	13	11	2	-	-	-
Trailer parks	22	20	10	8	2	-	-	-
Personal services	672	703	133	75	37	17	3	1
Laundries and dry cleaning plants	170	186	27	16	5	4	2	-
Dry cleaning plants, except rug	46	48	14	9	4	1	-	-
Beauty shops	334	347	57	24	24	7	1	1
Barber shops	24	23	17	17	-	-	-	-
Garment pressing, alteration, repair	41	36	13	9	3	1	-	-
Miscellaneous business services	465	606	65	34	12	14	4	1
Services to buildings	176	166	22	13	4	3	1	1
Misc. services to buildings	143	113	15	9	3	1	1	1
Miscellaneous business services	227	384	37	18	8	9	2	-
Business consulting services	(a)	(a)	10	8	-	2	-	-
Equipment rental and leasing	105	220	14	6	2	5	1	-
Business services, n. e. c.	81	118	11	3	5	2	1	-
Auto repair, services & garages	315	482	68	44	13	9	2	-
Automobile repair shops	168	273	53	37	11	5	-	-
Top and body repair shops	43	79	10	5	3	2	-	-
General automobile repair shops	87	131	26	18	6	2	-	-
Automobile repair shops, n. e. c. (a)	(a)	(a)	10	9	1	-	-	-
Automobile services, except repair	85	81	10	5	2	2	1	-
Miscellaneous repair services	136	213	32	20	8	3	1	-
Electrical repair shops	36	76	11	7	3	1	-	-
Miscellaneous repair shops	84	126	14	7	4	2	1	-
Amusement and recreation services, nec.	258	231	33	17	4	8	4	-
Misc. amusement, recreation services	140	149	15	8	-	5	2	-

(a) Information withheld to prevent disclosure of operations of individual businesses.

Source: 'County Business Patterns 1971'. U. S. Census, Washington, D. C. 1972, page 152.

C. SELECTED SERVICES

This category includes establishments engaged in rendering a wide variety of services to individuals and business enterprises. This sector of our economy is growing, because our income grows with resulting wants for more products and more services. Services in 6 categories with sub-categories are detailed in Table 4-23. The County is the smallest reporting unit and no official data are available for the Planning Area or the City of Rio Vista for 1971. By using the U. S. Census 1970 service employment figures we get some indication of Solano County and Planning Area ratio. The data are illustrated in Table 4-24, showing the two service categories given in the Census.

TABLE 4-24 TOTAL EMPLOYMENT IN SERVICES, 16 YEARS OLD AND OVER, 1970
Solano County, Southeastern Solano County Planning Area

Type of Service	Solano County	Planning Area	Planning Area Per- cent of Solano County
Business and repair services	1,206	32	2.7
Personal services	2,462	82	3.3

Source: U. S. Census, 1970, compiled by consultant.

Selected Services in the Southeastern Solano County Planning Area and Rio Vista in 1972 will be discussed in the following.

1. Hotels and Other Lodging Places

There are now 2 motels with 36 units, 2 hotels with 80 rentable units and 2 mobile home parks in Rio Vista, with 128 spaces. Fairfield has 6 motels with 361 units and Lodi 4 motels with 111 units.

Within the Planning Area is the Collinsville Fishing Resort, providing few trailer spaces. Near to Rio Vista and within the Southeastern Solano County Planning Area are the following resorts, providing - amongst others - camping and/or trailer spaces: Delta Marina, Hidden Harbor, Island Marina and Snug Harbor Resort.

The demand picture for additional lodging places in the future in resorts seems to be bright and the limit of development seems mainly a question of financing for the private sector.

2. Future Demand for Temporary Housing

Transient housing in the area is provided for two main types of users. With the growth of the area, more business from the Rio Vista community will be generated basically by business and industrial activities which bring some out-of-town visitors,

salesmen and executives into the area. By far the largest percentage, however, of out-of-town people coming to the area are recreationists. The Chapter on Rio Vista's Central Business District in this Report deals with this subject.

Any attempt to estimate the future number of recreationists desiring hotels, motels and other lodging facilities is quite hazardous, at best. The Delta is not only a through traffic area, but a travel destination for recreationists. Since no private resorts publish the use of their overnight accommodations and no data can be given since this would mean disclosure of confidential information, the attendance figures of the Brannan State Park overnight facilities are used. The available figures indicate a trend. The State Park has been in operation since 1953 and has 100 camp sites for year-round use. The figures of Brannan Island State Park attendance over 4 years from 1967/1968 to 1970/1971 show a growth of more than 10 percent of overnight use. This big increase is in spite of the slower California population growth rate during those years of only 2.4 percent.

Another factor of interest is the growth rate of mobility on roads. Highway 12 and especially highway 160 are not through-traffic freeways, but more local Highways, which carry destination traffic to the Delta. The growth rate of road mobility over 6 years is about 1.54% on Highway 12 and about 4.17% on Highway 160. The emphasis on growing overnight use is also apparent in comparison to the slower growth rate of road mobility.

3. Hotels and other Lodging Places Potentials

Continuing growth of demand for overnight stay in the area has been established based on the above indicated growth rate of more than 10% for Brannan State Park during 1967-1971. The potential seems to be much higher for recreational lodging facilities in the area. It is a latent, unsatisfied demand, independent of supply. The demand for motels and recreational facilities of a quality offered in the San Diego or Los Angeles area seems to be existent here, but untapped. Other lodging which may be provided for recreationists are apartments for rent and also for sale. About 2,500 feet of superb view property along the Sacramento River (Front Street area) is a prime land for such a development.

Mobile home development is part of the Chapter on "Housing Element" of this Report.

4. Personal Services

This sector includes laundries, dry cleaning - garment pressing, beauty shops and barber shops. The only personal services provided in the Planning Area are located in Rio Vista. There are 2 cleaners and 1 laundry and 1 laundry - self-service. Six beauty salons and 2 barber shops are operating in Rio Vista. Altogether 12 personal services' enterprises are serving an estimated Rio Vista market of about 4,090 persons or a rounded-off ratio of unit/population 1 : 330.

5. Future Demand for Personal Services

The future demand for personal services will be built around the expected population growth. It is assumed that all personal services for the 1980 population will be provided in Rio Vista and also half of the services needed for the 1990 population. It is further assumed that the 1972 12-unit ratio to 4,000 population (rounded-off 1 : 330) remains the same and that 1 unit is built on an average of about 500 square feet building space (plus parking, etc.) per unit. Table 4-25 shows the figures for 1980 and 1990.

TABLE 4-25 ESTIMATED 'PERSONAL SERVICES' DEMAND, 1980, 1990
Southeastern Solano County Planning Area,
City of Rio Vista (rounded-off figures)

	1980 Rio Vista Service Area (Planning Area)	1990 Rio Vista Service Area	1990 Remaining Planning Area
Estimated population for professional office space planning only (Existing units)	6,650 Units	9,000 Units	2,500 Units
Additional number of enterprises (ratio 1 unit per 330 population) (12)	8	16	8
Additional space required at average 500 sq. ft. per unit (excluding parking, landscaping, etc.)	4,000 sq. ft.	8,000 sq. ft.	4,000 sq. ft.

6. Miscellaneous Business Service

This category includes services to buildings (janitorial services), business services, like management consulting, equipment renting and leasing and similar activities. None of these services are provided for within the Planning Area. The potential for these services to be provided from the Planning Area seems relatively limited, owing to well established rental service stores & yards in Sacramento, Fairfield and Antioch.

7. Auto Repair, Services & Garages

This group includes renting of passenger automobiles or trucks without drivers. The automotive service is well established in Rio Vista and has a geographically widely dispersed clientele. There are now three body repairing and painting shops. Automotive renting without driver (leasing) is also well established and a sideline of the Rio Vista automobile dealers. No garage services are provided, because they are not needed at this time.

The potential is growing for these types of services with the population increase of the region, county, Planning Area and Rio Vista. A new approach has to be taken, since the existing automotive service quarters do not provide space for expansion. A move of the automotive enterprises jointly to a new area is strongly recommended. This would not only provide better auto services, it would also free the most valuable properties along the Sacramento River for a more appropriate use: Waterfront development for human use. About 10 - 15 acres may be involved along the Front Street area for such a development.

8. Miscellaneous Repair Services

These services include watch, clock and jewelry repair, electrical, furniture, bicycle, leather goods and similar repairs. There is one jeweler shop in Rio Vista; 1 electrical appliances; 2 television repair services and 1 furniture outlet.

The average per capita expenditure for repair services is about \$15.00 per year. Applying 'normal' sales volumes per square foot for miscellaneous repair services of \$45.00 per square foot, about 2,650 net sq. ft. will be needed by 1980 and about 5,000 net sq. ft. by 1990 in the immediate Rio Vista urban area. This does not include parking, landscaping, building lines and others.

9. Amusement and Recreation Services

These services include establishments for bowling, theatrical productions, as well as golf courses, bathing beaches, swimming pools and similar services. Motion pictures are excluded from this category.

Theatrical production can easily be performed at the Rio Vista High School Auditorium or other existing suitable places.

The public golf course near Rio Vista is out of use at this time. The golf course and the immediate area is recommended to be replanned as a 'Golf and Country Club Community' for residential purposes only.

Bathing beaches are at this time used only unofficially. The so-called "Government Beach" along the Sacramento River at the City's Sewage Disposal Plant should be made available to the public. The U. S. Corps of Engineers is using the beach to deposit dredge spoil in conformance with the Yolo - Sacramento Port District. The estimated general standard for swimming is about 580 persons per acre of bathing beach.

Considering only resident population of about 4,900 and 9,000 persons in 1980 and 1990 respectively in the immediate Rio Vista urban area wanting to have access at one time or another to the bathing beach, the estimate of area needed amounts to roughly 8 and 15 acres by 1980 and 1990 respectively. This does not include parking facilities at a rate of 300 square feet per car, or "only" 500 cars on 3.5 acres.

The area which belongs to the U. S. has about 2 miles of river frontage, not all of which is accessible. It is mandatory that this publicly owned land can be used by the public and all necessary steps should be taken by agencies concerned to assure that end.

No provisions are made as yet for recreationists coming to the area for swimming, a sport activity which is getting increasingly popular. Swimming areas along the Sacramento River and the tributaries should be developed by private enterprise as an additional attraction to private resorts.

D. OFFICE SPACE

1. Professional Office Space

The only professional office space in the Planning Area is in the City of Rio Vista, occupied by medical doctors, dentist, attorneys and other professionals as illustrated in the following Table.

TABLE 4-26 PROFESSIONAL / POPULATION RATIO, 1971
City of Rio Vista (Rounded-off figures)

Profession	Ratio
Medical doctor	1 : 1600
Chiropractor	1 : 3200
Optometrist	1 : 3200
Dentist	1 : 1600
Public accountant	1 : 1600
Certified public accountant	1 : 3200
Attorney	1 : 3200

Source: Chamber of Commerce, Rio Vista
Yellow pages, telephone directory, 1971.

The relatively low figure for medical doctors in the Planning Area reflects the current low population level and the specific geographical characteristics of South-eastern Solano County Planning Area and Rio Vista.

Presently some Rio Vista residents also use medical services provided in the nearest towns on Highway 12, either in Lodi or in Fairfield. Because of the lack of medical facilities, the Planning Area has been identified as "health service scarcity area" by the Bay Area Comprehensive Health Planning Council, San Francisco.

The medical - dental office space demand expected in the Planning Area and the City of Rio Vista is expressed in the following Table.

TABLE 4-27 ESTIMATED PROFESSIONAL OFFICE SPACE DEMAND, 1980, 1990,
Southeastern Solano County Planning Area,
City of Rio Vista (rounded-off figures)

			1980 Rio Vista Service Area (Planning Area)	1990 Rio Vista Service Area	1990 Remaining Planning Area
Estimated population, for professional office space planning only			4,900*	9,000**	2,500
	Ratio (Existing units)		Units	Units	Units
Medical doctors	1:1250	2	4	4	1
Chiropractors	1:4500	1	1	1	-
Optometrists	1:3000	1	2	2	-
Dentists	1:1250	2	4	4	1
Public accountants	1:1500	2	3	3	1
Cert. publ. account.	1:1350	1	4	4	1
Attorneys	1:1600	1	3	3	1
Increase			over 1973 level	Over 1980 level	
Medical doctors			2	-	1
Chiropractors			-	-	-
Optometrists			1	-	-
Dentists			2	-	1
Public accountants			1	-	1
Cert. publ. account.			3	-	1
Attorneys			2	-	1
Additional space required at average 650 square feet per professional (excluding parking, setbacks, etc.)					
Medical doctors			1,300	-	650
Chiropractors			-	-	-
Optometrists			650	-	-
Dentists			1,300	-	650
Public accountants			650	-	650
Certified public accountants			1,950	-	650
Attorneys			1,300	-	650
Total square footage			7,150	-	3,250

* It is assumed that all services will be supplied locally.

** Only about half of the population is estimated conservatively to look for professional advice in the Rio Vista area. The remaining population may look for health services outside of the Rio Vista's service facilities, owing to specialization of health services. Hospital planning is not part of this General Plan program.

2. General Office Space

Offices under this heading include finance, insurance, real estate; single purpose office buildings; technical services and similar. The existing pattern of development is along Main Street in a scattered form and at First Street. There are now three financial institutions in Rio Vista. First of all the local bank, the Bank of Rio Vista, founded in 1904; a branch of the Bank of America and since very recently a branch of the Stockton-based San Joaquin First Federal Savings and Loan Association. The Association works temporarily out of a mobile unit.

Five insurance agencies are listed in Rio Vista, covering the wide range of insurance groups. Four realtors are serving the area out of their Rio Vista offices.

Other general office space in Rio Vista includes, amongst others, one telephone answering service, two notaries located in the offices of an insurance broker and realtor. Tax return services are provided for out of three offices, which also provide additional business service. Utility Companies (P.G. & E., Citizens' Utilities) maintain offices in the City, as does the Rio Vista Chamber of Commerce.

The General Office Space demand expected in the Planning Area and the City of Rio Vista is illustrated in the following Table. The figures have been prepared under the assumption that the employment ratio between office workers and population is 1:70, and that by 1980 no general office space is to be built outside of Rio Vista urban area. By 1990 all of the 11,500 total population may use the established offices in Rio Vista.

4,900 persons by 1980 and 11,500 persons by 1990 have an estimated demand for 70 and 164 general office employees respectively. The average office space requirement is estimated to be approximately 200 square feet per employee. The following Table summarizes the estimate.

TABLE 4-28 ESTIMATED GENERAL OFFICE SPACE DEMAND, 1980, 1990, Southeastern Solano County Planning Area, City of Rio Vista

	1980 Rio Vista Service Area (Planning Area)	1990 Rio Vista Service Area	Remaining Planning Area *
Estimated population to be served, for general office space planning only	4,900	9,000	2,500
Number of office workers at a ratio of 1:70	70	128	36
Space required at 200 square feet per office worker	14,000	25,600	7,200

* to be served by Rio Vista offices.

E. GOVERNMENT

Public finance in the Cities of Solano County, including Rio Vista is shown in Table 4-29. The City of Rio Vista has the lowest general city property tax rate of all Cities in Solano County and with few exceptions also of the 9-County San Francisco Bay Area. That statement is also valid for the "true" tax rate which converts the assessment value rate to a rate based on market value.

TABLE 4-29 COMPARATIVE FISCAL STATUS, CITIES OF SOLANO COUNTY

City	City Rate	
	1960/61	1972/73
Benicia	1.90	2.11
Dixon	2.64	3.15
Fairfield	1.99	1.84
Rio Vista	1.42	1.19
Suisun City	1.15	1.50
Vacaville	2.01	1.98
Vallejo	1.47	2.33

Source: "Research" The Bay Area Council, San Francisco, January 1973.

The 1972/73 budget for the City of Rio Vista is one of the highest in its history: \$671,378, slightly over 6 percent more than the budget for last year. The total tax rate remained again unchanged: \$1.19 per \$100.00 of assessed valuation.

F. EMPLOYMENT

1. Existing

The agricultural employment is illustrated in Table 4-30, showing the percentage of the Planning Area's employment of the County's total. Table 4-31 shows the number of employees in the County and the wages. More detailed information in relation to size of reporting unit (farm) and employment is given in Table 4-32. The local emphasis is on farms with a small number of employees.

The employment - unemployment situation is illustrated in Table 4-33 and 4-34, differentiating in the ethnic background of the work force in the County and Rio Vista. The overall employment status by age, sex and education in Solano County and the Planning Area is shown in Table 4-35. As can be seen From Table 4-33, 7.7 percent of the total civilian labor force in Solano County was unemployed.

In 1970 6.5 percent of the male civilian labor force and 9.6 percent of the female civilian labor force was unemployed in Solano County, as illustrated in Table 4-35. According to a recent report by the State Department of Human Resources, the

Solano -Napa Counties seasonally adjusted unemployment rate dipped to 4.8 percent. Table 4-36 illustrated the industrial employment. Owing to gas fields a high percentage of the Planning Area's employment is in "Construction", followed by "Utilities" and a strong "Trade". The total employed labor force in the Planning Area in 1970 was 1,752 persons or about 42 percent of the total 4,136 residents.

For planning purposes, the estimated employment levels as presented here appear reasonable, but should of course be cross-checked and up-dated periodically.

TABLE 4-30 AGRICULTURAL EMPLOYMENT, 1960, 1970, SOLANO COUNTY AND SOUTHEASTERN SOLANO COUNTY PLANNING AREA

Agriculture	Solano County		Planning Area	Planning Area
	1960	1970	1970	Percent of Solano County 1970
Farm Workers	2,088	1,503	266	15

Source: U. S. Census 1960, 1970.

TABLE 4-31 AGRICULTURAL EMPLOYMENT, April 1970, April 1971, September 1971, SOLANO COUNTY

Date	Reporting Units	Total Quarterly Wages	Number of Employees
April 1970	382	\$2,597,137	2,106
April 1971	366	2,619,101	1,901
September 1971	376	4,339,484	4,771

Source: California Employment and Payrolls in Agricultural Labor, Sacramento, Report 129, August 1972.

TABLE 4-32 EMPLOYMENT TOTAL WAGES AND REPORTING UNITS BY SIZE OF EMPLOYMENT IN FARM ESTABLISHMENTS, SOLANO COUNTY, THIRD QUARTER, 1971

Employment September 1971	Total wages July-Sept. 1971 (in thousands)	Number of reporting units with specified number of employees								
		Total	0-3	4-9	10-19	20-49	50-99	100-249	250-499	500 and over
4,771	\$4,399	376	216	81	44	18	12	3	1	1

Source: State Department of Human Resources Development, Employment Data and Research, Sacramento, April 28, 1972.

TABLE 4-33 EMPLOYMENT - UNEMPLOYMENT , 1970
SOLANO COUNTY, CITY OF RIO VISTA

Population				Employment	Unemployment 16 years and over							
Total	Black	Span. Amer.	Other Races	Civilian 16+years	Total	Black	Spanish Amer.	Other Races				
Number	Perc.	Perc.	Perc.	Number	Number	Rate	Number	Rate	Number	Rate	Number	Rate
a. 169941	9.8	10.8	4.3	50128	4198	7.7	478	9.8	638	11.5	168	8.0
b. 3135	0.	9.7	2.1	1134	80	6.6	0	0	10	6.8	5	29.4
a. Solano County												
b. Rio Vista												

TABLE 4-34 SELECTED MANPOWER INDICATORS, 1970
SOLANO COUNTY, CITY OF RIO VISTA

Civilian Labor Force 16 years and over	Experienced Unemployed Last Occupation	Population 16-21 not in school, Unemployed or not in Labor Force	Civilian Labor Force Participation rate Males 16 and over	Workers Working in County of Residence	Median Family Income 1969	Families below Poverty Level	Unemployed Civilian Male heads Below Poverty Level	Families with Public Assistance Income	Vietnam Veterans
Number	Number	Number	Percent	Percent	Dollars	Percent	Number	Number	Number
a. 54326	104	3668	55.4	76.2	9880	19.1	142	2839	5981
b. 1214	0	67	79.1	75.2	10703	3.8	0	46	124

Source: Compiled from "Selected Manpower Indicators from the 1970 Census, Fourth Count., U. S. Department of Labor, San Francisco, Run date 6/11/1972, Lawrence Berkeley Laboratory, pp. 10, 29, 30, 40.

TABLE 4-35 EMPLOYMENT STATUS, 1970 - SOLANO COUNTY
SOUTHEASTERN SOLANO COUNTY PLANNING AREA

Employment Status	Solano County 1970	Planning Area 1970	Planning Area percent of Solano County %
Male, 16 years old and over	60,158	1,615	2.7
Labor force	47,962	1,290	2.7
Percent of total	79.7	79.7	
Civilian labor force	33,334	1,246	3.7
Employed	31,151	1,167	3.7
Unemployed	2,183	79	2.7
Percent of civilian labor force	6.5	6.3	
Not in labor force	12,196	325	2.7
Inmate of institution	2,286	-	-
Enrolled in school	3,107	114	3.7
Other under 65 years	2,918	44	1.5
Other 65 years and over	3,885	167	4.3
Male, 16 to 21 years old	11,408	180	1.6
Not enrolled in school	6,283	41	0.7
Not high school graduates	922	5	0.5
Unemployed or not in labor force	388	-	-
Female, 16 years old and over	55,847	1,582	2.8
Labor force	21,471	462	2.2
Percent of total	38.4	29.2	
Civilian labor force	20,992	462	2.2
Employed	18,977	435	2.3
Unemployed	2,015	27	1.3
Percent of civilian labor force	9.6	5.8	
Not in labor force	34,376	1,120	3.3
Married women, husband present	37,015	1,157	3.1
In labor force	13,631	329	2.4
With own children under 6 years	10,767	303	2.8
In labor force	2,703	60	2.2

Source: Compiled from U. S. Census, 1970.

TABLE 4-36 INDUSTRIAL EMPLOYMENT , 1960, 1970 - SOLANO COUNTY
AND SOUTHEASTERN SOLANO COUNTY PLANNING AREA

Industry	Solano County 1960	Solano County 1970	Planning Area 1970	Planning Area % of Solano Cy. 1970
Total employed, 16 years old and over	38,038	50,128	1,602	3.2
Construction	2,174	2,462	153	6.2
Manufacturing	6,603	10,315	95	0.9
Durable goods	2,174	6,988	57	0.8
Transportation)		1,584	51	3.2
Communications, utilities, and)	1,898			
sanitary services)		1,513	62	4.1
Wholesale trade)	6,397	1,067	27	2.5
Retail trade)		9,151	289	3.2
Finance, insurance, and real estate	1,382	1,967	67	3.4
Business and repair services	n. a.	1,206	32	2.7
Personal services	n. a.	2,462	82	3.3
Health services	n. a.	3,083	30	1.0
Educational services	2,064	4,148	105	2.5
Other professional and related services	n. a.	1,893	75	4.0
Public administration	5,258	6,788	99	1.5
Other industries	n. a.	2,489	435	17.5
n. a. - not available				

Source: Compilation U. S. Census, 1960, 1970.

2. Future Trends

The fastest gains will be among the young adults, who will start families and create a strong market for housing and consumer durable goods, such as furniture, appliances and autos. The State-wide growth 1960, 1970 and 1980 estimate is shown in Table 4-37. "Services", followed by "Government", show the greatest increase towards 1980. Also "Finance" and "Trade" indicate growing strength.

TABLE 4-37 CALIFORNIA GROWTH INDICATORS TO 1980

	1970	1975	1980	Compound annual % Change		
				1960-70	1970-75	1975-80
Total population (thousands)	19,968	21,235	22,615	2.4	1.2	1.3
Labor force (thousands of workers)	8,555	9,230	10,060	3.1	1.5	1.7
Employed	8,036	8,743	9,618	3.1	1.7	1.9
Agriculture	289	277	262	n. a.	-0.8	1.1
Minerals	31	31	31	0.3	-	-
Construction	303	300	305	0.3	-0.2	0.3
Manufacturing	1,558	1,585	1,665	1.7	0.3	1.0
Transportation, communication, utilities	459	495	530	2.5	1.5	1.3
Trade	1,531	1,700	1,890	3.7	2.1	2.1
Finance, insurance, real estate	374	425	480	4.4	2.6	2.5
Services	1,266	1,475	1,740	5.9	3.1	3.4
Government	1,425	1,630	1,865	5.0	2.7	2.7
All other	799	825	850	n. a.	0.6	0.6
Unemployed	519	487	450	3.5	1.2	-1.5
% of labor force	6.1	5.3	4.5	-	-	-
Total personal income (billion of 1970 dollars)	88.8	108.4	133.1	4.7	4.1	4.2
Per capita personal income (1970 dollars)	4,450	5,100	5,890	2.3	2.8	2.9
Note: Industry employment figures exclude self-employed and unpaid family workers. n. a. Not available.						

Source: U. S. Department of Commerce; California Department of Human Resources Development. Forecasts by Economic Department, Wells Fargo Bank, 1972.

In the Southeastern Solano County Planning Area the agricultural labor force is not expected to increase. Mining will slightly increase owing to increasing gas extraction. Construction will increase in all three major categories of enterprise. Manufacturing will strongly increase owing to expected industrial development in the Greater Collinsville Area. Transportation employment will strongly increase with the Meridian Civilian Airport facility. Trade & Finance groups will also show an increasing employment change owing to general industrial and urban growth. Services and Government will show an increase, because more services are demanded by the public and owing to a growth in urbanization.

3. Enterprises of Employment Relevance in the Planning Area

a. The Meridian Airport Employment Potential

The Meridian Airport employment potential is measured for the purpose of the planning program by four activities. These industrial activities are directly associated with serving the airport and the traffic. Their two-digit Standard Industrial Classification numbers are as follows:

Industrial Activity	SIC Number
Transportation by Air	45
Hotel and other Lodging Places	70
Federal Government	91
Wholesale Trade	50

The following information for the Meridian Airport economics was compiled and adjusted by your consultant from the Regional Airport Systems Study, dealing with economic impact. This study is based on population forecasts which have since been revised downwards and no revised airport projections have been published. The most useful way to use the Airport Report figures is by taking lower percentages of the totals according to the revised population forecasts, thus leaving the more correct figures to future models and computer runs, when specific and detailed information is needed.

(1) Transportation by Air

It is assumed that employment around airports through Transportation by Air is a direct function of the passenger traffic levels at the airport. The established ratio during the 1980's is 1 employee per 2,672 annual airport passengers and 1 maintenance base employee per 14,330 airline passengers. Assuming 1 million airline passengers by 1980 and 6 million by 1985 at Meridian Airport, the employment figures are illustrated in the following Table.

TABLE 4-38 AIR TRANSPORTATION EMPLOYMENT, MERIDIAN AIRPORT
(Rounded-off figures)

	1980	1985
Air Transportation Employees	375	2,250
Maintenance Base Employees	70	420

(2) Hotels and other Lodging Places

It is generally agreed that a full service hotel will employ about one person for every 3.5 rooms. Hotel rooms around San Francisco Airport exist at a rate of about 1000 rooms for every 5.3 million passengers enplaned and deplaned at the airport.

TABLE 4-39 HOTELS AND OTHER LODGING PLACES, MERIDIAN AIRPORT
NUMBER OF ROOMS AND EMPLOYEES (Rounded-off figures)

	1980	1985
Rooms in full service hotel	190	1, 140
Number of employees	55	330

(3) Federal Government

Federal Government employees associated with operations at a major commercial airport have been about one federal employee for every 8.7 air transportation employees. Accordingly the number of federal employees are shown in the following Table.

TABLE 4-40 FEDERAL GOVERNMENT EMPLOYEES, MERIDIAN AIRPORT

	1980	1985
Number of federal government employees	43	258

(4) Wholesale Trade

Quantifiable relationships between airport traffic levels and employees in the wholesale trade industry were not as apparent from the analysis as for the other industry categories discussed above. The location of wholesale trade industry around an airport area appeared to be influenced by several factors. For example, some segments of the wholesale trade industry are significant users of air transportation, particularly as air cargo shippers and consignees. In addition, the area around most major airports is supplied with above average surface transportation facilities (freeways, railroads, etc.). This tends to make the area attractive to the wholesale trade for reasons other than those directly related to its airport proximity. As traffic grows around an airport, some segments of the wholesale trade industry located there will certainly expand. On the other hand, the expansion of other types of industry around a major airport create increasing land values and surface transportation congestion conditions which will tend to deter the growth of other segments of the wholesale industry. For these reasons, it has been assumed that, as a group, the wholesale trade establishments now located around major airport sites will grow at about the same rate projected for this industry in the region as a whole.

It has been assumed that by 1985 approximately 13, 100 wholesale trade employees will locate around major commercial airports in the region with 65% or 8, 500 employees continuing to be employed around San Francisco Airport. The remaining 35% or 4, 600 would be allocated to the Meridian Airport site under the assumption that by 1985 26, 314, 000 passengers would use the facility.

Revised population figures brought Meridian Airport use down to 1,000,000 passengers by 1980 and 6,000,000 passengers by 1985. Consequently the wholesale trade employment would theoretically amount to about 1,050 persons, by 1985.

(3) Other Basic Employment

In addition to the four activities directly related to the operation of the Meridian Airport, other basic employment estimates are presented. These estimates were made by assuming that employment in each of the "other basic industries" will grow at the same rate as that projected for that specific industry in the region as a whole. Industry growth rates for the region were developed from projections prepared for the Bay Area Transportation Study commission and summarized in the format used for inputs to another report to the Transportation Commission. The estimated "other basic employment" by 1985 would add about 17,127 jobs and with the revised passengers figures the jobs in 1980 would be about 650 and about 3,900 by 1985.

(6) Employment and Population Projection from 1985 to 1990

The target data of the above forecasts prepared for the Regional Airport Systems Study is the year 1985. The target data of the Southeastern Solano County General Plan is the year 1990. Assuming the Bay Area growth to 1990 to reach 6,556,800 people, thus adding 1,074,900 persons since 1980 (5,481,900), an estimated 53,700 persons between 1985 and 1990 - or about 9 percent - would be added theoretically. As illustrated in the Summary Table about 8,950 persons are expected to be employed by 1990 owing to the Meridian Airport operation. 8,950 jobs are assumed to represent about roughly 27,000 population related to Meridian Airport only.

TABLE 4-41 SUMMARY OF ESTIMATED EMPLOYMENT, MERIDIAN AIRPORT

	1980	1985	1990
Transportation by Air	445	2,670	2,910
Hotel and Other Lodging Places	55	330	360
Federal Government	43	258	281
Wholesale Trade	175	1,050	1,145
"Other Basic Employment"	650	3,900	4,251
Total	1,368	8,208	8,947

Although the above figures are adjusted from the Airport Study, they serve as a general indicator of employment potential of Meridian Airport for general planning purposes only. Further adjustments may be needed in the light of the studies by the "San Francisco Bay Regional Metropolitan Commission (MTC) and the State's "Sacramento - Stockton - San Francisco Bay Area Corridor Study".

PART I. SOUTHEASTERN SOLANO COUNTY PLANNING AREA

PART I. CHAPTER 5. LAND USE ELEMENT

A. EXISTING LAND USE, 1973

The Planning Area's about 285 square miles are used by man nearly throughout for livestock and crop production, as shown on the accompanying map Land Use 1973. Natural gas is extracted in the general Rio Vista area. In the southwestern part, in the Collinsville area, cattle-raising uses are changing in anticipation of industrial development. Just about 1 mile north of Collinsville are about 12 single-family houses. Small industrial development is located at Highway 12 and Azevedo Road (Oil Well).

The northwestern part of the Planning Area adjacent to the planning boundary, is used by the operations of Travis Air Force Base, Fairfield. The air terminal processes in excess of 100, 000 passengers and 20, 000 tons of cargo monthly. This activity demands airport clear zones and produces airplane noise impacted areas under and near take-off and landing zones partly in the Central Solano and Dixon areas of Solano County.

Between Collinsville and Travis Air Force Base is the old established and small community of Birds Landing, with about 12 local families and their dwellings. Growth can be expected after transportation and industrial development are established.

B. EXISTING ZONING, 1973

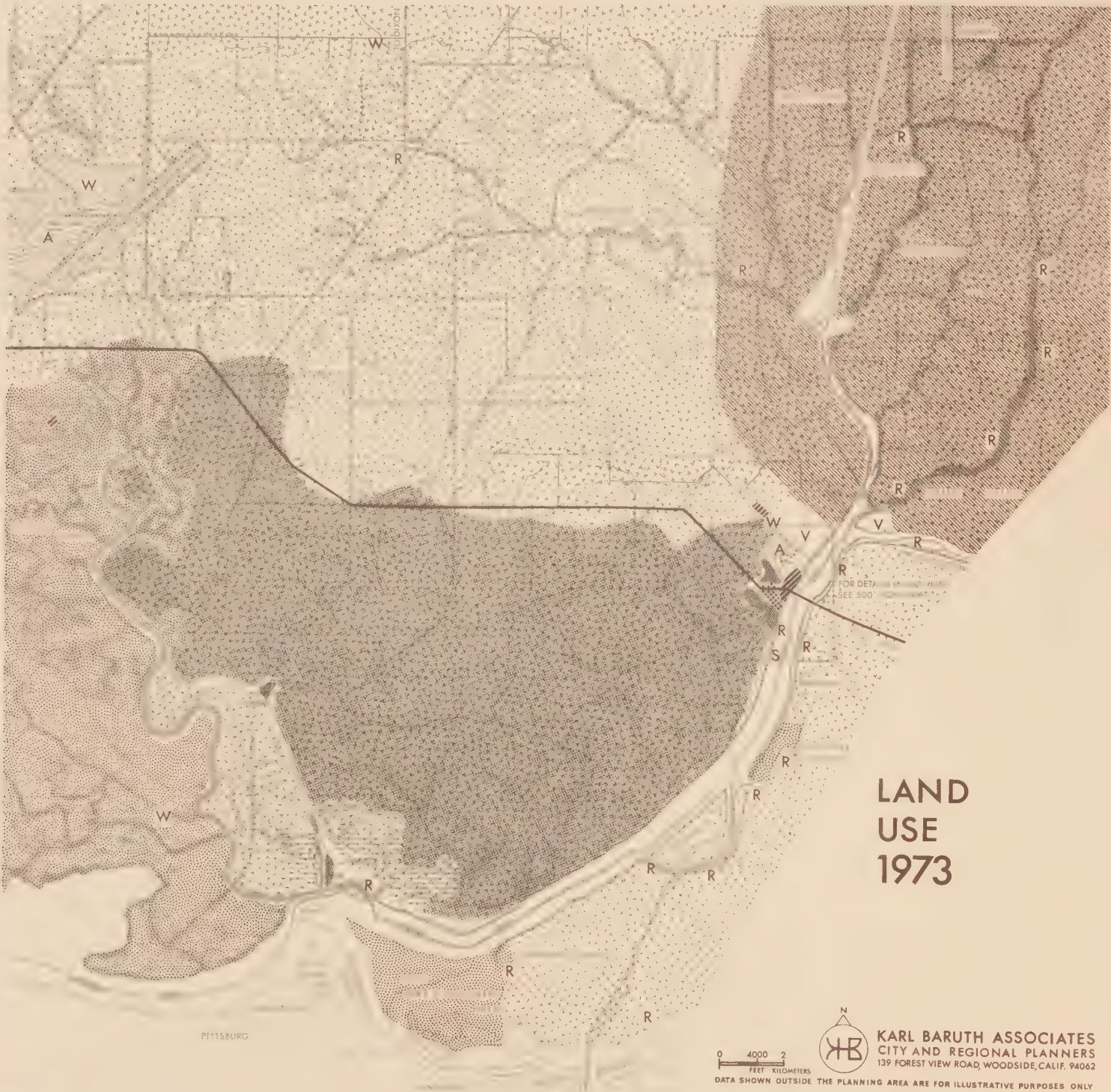
The County Planning Area had been zoned on an interim basis by ordinance until the 1957 General Plan had been prepared. That served to prevent undesirable construction or land use until precise zoning had been adopted.

The County Zoning Ordinance was adopted in December 1958 and has been continuously updated and refined.

The several districts established, into which the County is divided, are designated as follows:

Symbol	District
T	Temporarily Unclassified Districts
A	Exclusive Agricultural Districts
A-R	Agricultural - Residential Districts
R-E	Estate Residential Districts
R-S	One-Family Residential Districts
R-D	Duplex Residential Districts
R-M	Multiple Family Residential Districts
P	Park Districts
C-H	Highway Commercial Districts
C-N	Neighborhood Business Districts
C-G	General Commercial Districts
C-S	Commercial Service Districts
C-O	Business and Professional Office Districts
M-L	Limited Manufacturing Districts
M-G	General Manufacturing Districts

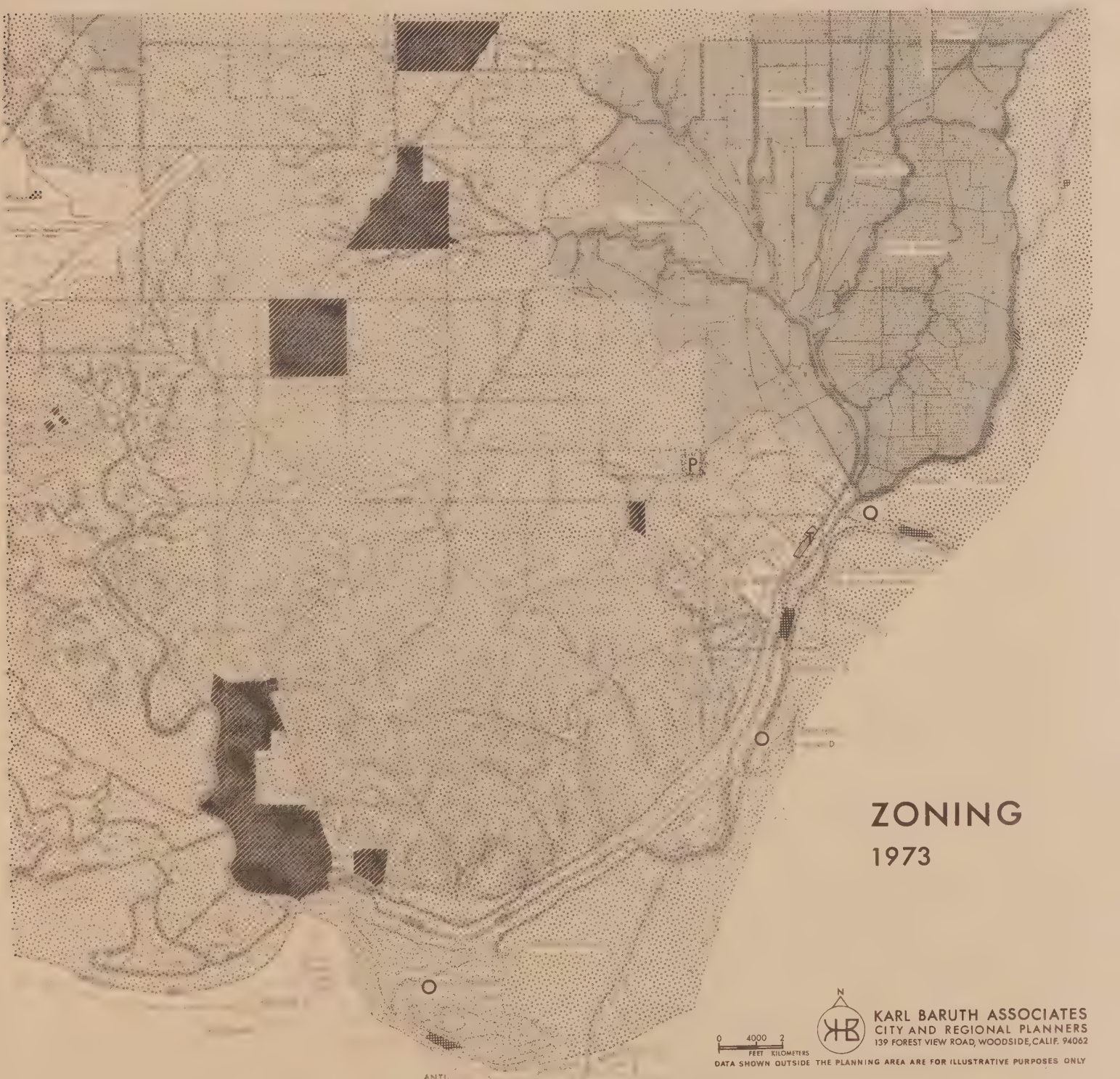
SOUTHEASTERN SOLANO COUNTY PLANNING AREA * CALIFORNIA
CITY OF RIO VISTA AND SOLANO COUNTY PLANNING COMMISSIONS



- RESIDENTIAL
- PUBLIC & SEMI-PUBLIC
- INDUSTRIAL
- COMMERCIAL
- MAJOR RECREATION AREAS
- AGRICULTURE (PASTURE)
- DIFFERENT GRAINS, SHEEP RANGES
- CATTLE LANDS CHANGING USE
- PEAS, MILO, SUGAR BEETS, PEARS
- HIGHWAY 12
- A AIRPORT
- R RESORT OR MARINA
- S SEWAGE PLANT
- W SOLID WASTE DISPOSAL SITE
- V VACANT OR UNUSED

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ZONING
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- SOLANO COUNTY :

 - R-E ESTATE RESIDENTIAL
 - A-20 EXCLUSIVE AGRICULTURE
 - A-10 EXCLUSIVE AGRICULTURE
 - C-N NEIGHBORHOOD COMMERCIAL
 - M-G GENERAL MANUFACTURING
 - PARK
 - T TEMPORARILY UNCLASSIFIED
- SACRAMENTO COUNTY :

 - C-1 LIMITED COMMERCIAL
 - C-O COMMERCIAL RECREATIONAL
 - R-E-2 RURAL ESTATES
 - RECREATIONAL
 - AG-20 & AG-80 EXCLUSIVE AGRICULTURE

CITY OF FAIRFIELD :

 - COMMERCIAL THOROUGHFARE
- YOLO COUNTY :

 - AGRICULTURE

In the Planning Area nearly all land is zoned for agricultural use on 10 acre or 20 acre minimum lot size, as illustrated on the zoning map. Expected development in the Collinsville area is reflected by industrial zoning.

Although no industrial development did yet occur on lands zoned for industrial purposes, the existing zoning is generally consistent with this new General Plan.

C. FUTURE LAND USE

1. Solano County

The in 1967 adopted Solano County General Plan states that land is the only real value, particularly when the highest and best use, as measured by overall standards, is made of it. The prudent use of land is among the greatest legacies of any generation.

2. Southeastern Solano County Planning Area

No special land use policy statements for the future are made in the 1957 General Plan for the Planning Area.

Discussion One of the purposes of planning is to reflect the desire of the Citizens to maintain or improve the quality of their lives with in their environmental conditions. There are a number of human activities which are basic in the lifes of the residents of the Planning Area. These activities demand different arrangements and shape the urban form. The activities are:

Dwelling	Servicing	Learning	Shopping
Recreationing	Socializing	Working	Moving.

The first seven basic human activities are being interconnected by human and mechanical movements "moving", which is the subject of special attention in Chapter 6 of this report.

Man-made changes on, above and under the earth by using (or misusing) the grounds can result in land use conflicts like premature urban or rural subdivisions, use of hazardous areas or the disregard of the fact that "everything relates to everything else".

Goals are: To provide land use policies which contribute to the overall quality of life for residents and visitors in the Planning Area.

To recognize the use of land as a human activity with eight different major categories.

Policies are: Goals and policies should be developed for each of the eight human activity categories separately, and adhered by.

County level of Government making decisions affecting land use shall analyse and evaluate the social, economic and natural environmental impacts.

Assessment and taxation policies shall minimize the current role of taxes as they influence land use.

3. Discussion of Human Activities

a. Dwelling

The growth of the Planning Area expressed in population and dwelling units (at 3.0 persons per unit) is shown in the following Table.

TABLE 5-1 POPULATION AND HOUSING UNITS, 1970, 1980, 1990
Southeastern Solano County Planning Area

Year	Population	Housing Units
1970	1,001	391
1980	1,750	585
1990	2,500	835

During the next two decades about 1500 new residents are expected to dwell in about 500 new housing units.

b. Recreationing

This activity is discussed in Chapter 15 related to Rio Vista's urban area.

Related to the recreationing activity on County lands is the Suisun Marsh area. Of the 84,000 acres of the marsh only about 2,500 acres are in the Southeastern Solano County Planning Area.

The land use at the fringe of the marsh is important for the protection and enhancement of the marsh environment. The recently adopted 80 acre minimum site area would protect the marsh at the fringes as a proper transition to the abutting lands. These lands are now used agriculturally.

An additional transition area is recommended along the eastern boundary of the marsh since industrial use is planned for the area and the lands are already partly zoned since recently for industrial use.

The delineation of an exact boundary is not part of a General Plan preparation. Therefore the "Suisun Marsh Transition Area" boundary as illustrated on the map "Land Use and Circulation 1990" is only a schematical indication of an intent. The long-term five agency study of the Suisun-Marsh will hopefully provide more information on that subject.

It is recommended that the transition area be assured through specialized zoning and by a deep building line towards the marsh fringe, as prescribed by the County Planning Commission after further study.

c. Servicing

This category includes a wide variety of activities under the heading "Utilities".

(1) Water Supply

Existing water supply in the Planning Area is satisfied by wells from groundwater basin.

Future water demand for the County, via North Bay Aqueduct is indicated in a recent study by the State. For the Planning Area (Montezuma Hills) the U. S. Bureau of Reclamation intends to transport water via the Denverton Channel. The Bureau's anticipated water demands are shown below.

TABLE 5-2 ANTICIPATED WATER USE, MONTEZUMA HILLS UNIT
(SOUTHEASTERN SOLANO COUNTY PLANNING AREA)

Year	Municipal and Industrial (acre-feet)	Irrigation (acre-feet)	Fish and Wildlife (acre-feet)	Total (acre-feet)
1980	65,300	10,000	150,000	225,300
1990	83,400	98,900	150,000	332,300
1995	98,000	148,200	150,000	396,200
2000	112,500	148,200	150,000	410,700
2080	112,500	148,200	150,000	410,700

Goal is: To supply water to the Montezuma Hills and Collinsville area in order to supply industry and to encourage industrial growth.

Policy is: The Montezuma Hills water supply plan by the Bureau should be realized as soon as possible.

(2) Liquid waste disposal

Discussion: No facility exists at this time. Future industrial growth in the Collinsville area will demonstrate the need for an area-wide facility. The established procedure to dispose of water into the Bay is not acceptable. A site upstream of Montezuma Slough is suggested opposite the 8000 acres of the State owned Grizzly Island Management Area. The Meridian airport related commercial facilities should be serviced by facilities from Fairfield.

Goal is: To stop sewage discharge into the Sacramento and San Joaquin Rivers.

Policy is: Waste water pollution should be stringently minimized within the framework of the regulations laid down by the Bay Area Sewer Services Agency.

(3) Solid waste disposal

Discussion No large disposal site exists in the Planning Area. Future needs have been anticipated in a solid waste management study for the County in 1970. A recommended future industrial waste disposal plan site was recommended for the Planning Area. The 1970 study has not been adopted by the County Board of Supervisors and no property has been acquired. A study is now underway to provide regional waste disposal to build up flood-prone Delta islands. Another solid waste management study by "Envirosol" suggests a site at Potrero Hills.

Goal is: To regard solid waste as a potential source of pollution which can be minimized.

Policy is: With the growth of the Collinsville area a solid waste disposal site should be located in the Planning Area as a matter of urgency, if Potrero Hills "Envirosol" plans are discarded.

(4) Electricity

Discussion Pacific Gas and Electric Company acquired a site near Collinsville with the plan to build a nuclear power plant. P. G. & E. is progressing with geological trenching at its Collinsville site. There are many licensing and approval stages that a new power facility must go through before construction can begin. The location of the plan is at a very sensitive area for the anadromous fish run: the junction of the Bay with the San Joaquin - Sacramento Rivers.

Goal is: To avoid thermal water pollution at the anadromous fish run junction (Bay - Delta).

Policy is: Thermal waters should be discharged only at the right time, the right height and the right temperature, in cooperation with the State Department of Fish and Game.

d. Socializing

Apart from an existing elementary school and 2 churches, no facilities for the 1001 (1970) or 2500 (1990) persons are planned.

e. Learning

The sparsely settled Planning Area is within the boundaries of the River Delta School District. In the rural area elementary education (1st - 6th grade) is provided at the Montezuma Elementary School in Birds Landing. Students are bused to Rio Vista for education after the 6th grade. School enrollment in the Montezuma School was 43 pupils in 1967, 31 by 1971 and 38 students in 1973.

Future population growth in the Planning Area is hardly anticipated and no new schools are needed.

f. Working

(1) Agriculture

Discussion The Southeastern Solano County Planning Area lands are used nearly throughout for livestock and crop production, as shown on the map 'Land Use 1973'. In the Collinsville area, cattle-raising uses are fading out in anticipation of industrial development. Sheep grazing and crops are expected to remain in the future the dominant land uses in the Montezuma Hills. Crops include: alfalfa, barley, wheat, oats.

In the northwestern part of the Planning Area, north of Highway 12, the land is used for pasture only. That area borders the Travis Air Force Base. In cooperation with Travis Air Force Base, the Meridian Airport providing civilian services is planned and discussed in Chapter 6 of this report.

The northeastern part of the Planning Area, north of Rio Vista, around Ryer Island, the irrigated lands are used for the production of grains, pears, milo, some alfalfa, sugar beets, tomatoes and few asparagus. That area also contains some resorts for water-oriented recreational activities.

The future agricultural potential seems bright since the food consumption within the greater San Francisco metropolitan complex is expected to increase owing to population growth. Agricultural output per acre is expected to increase owing to refined production methods. No increase in existing agricultural employment of 226 farmworkers is expected in the Planning Area.

Goal is: To preserve areas of first class agricultural lands for intensive agricultural use only.

Policy is: The agricultural use should be protected by retaining the existing exclusive agricultural zoning, and the encouragement of the use of agricultural preserve concept for prime quality agricultural lands.

The "Solano County Industrial Development Agency" informed the planning consultant by letter of April 4, 1973, over the signature of the Executive Director (Mr. F.R. Henrekin) that the area between Collinsville and Rio Vista, with the exception of the portion set aside for a recreation area, be planned for future industrial use. The recommendation has been discussed with the citizens on May 2nd and it was decided to make reference to this in the General Plan text.

(2) Mineral extraction

Discussion The largest producer of dry gas in California is the Rio Vista gas field located in the Southeastern Solano County Planning Area and Sacramento County. At the present rate of withdrawal the now known gas reserves will be used up around 1980. Gas is a non-replenishable natural resource and an important economic asset for the area will be lost, if drilling is discontinued.

Goal is: To manage natural gas extraction operations also in the future in such a way that they do not interfere with the agricultural and grazing land use in which they are located.

Policy is: Natural gas extraction operations should be maintained and expanded. Visual blight (if any) and safety hazards should be considered before granting permits. Land is to be restored to its natural state after the well has been abandoned.

(3) Manufacturing

Discussion Future land use for manufacturing in the Planning Area is planned to be located around the possible Collinsville Harbor area and further north along the existing and future road and rail transportation band. The transportation development and the advantage for the industrial development is discussed in Chapter 6 of this Report.

The three industrial areas north of Highway 14 have been zoned many years ago for industry, but are used for agriculture.

The industrial proposals include about 3000 acres for general industrial purposes and about 4000 acres for industrial uses. The industrial uses to the north of the Collinsville area should be of the "limited" type, owing to the nearness of the Suisun Marsh area. "Limited" implies the type of industrial operation having a "clean" performance. The building lines towards the Marsh should be greatly increased over the required set-backs in the County Ordinance, to provide for a transition area.

The areas to the east of the Collinsville Harbor are suitable for those industrial activities which depend on the Sacramento deep water channel for their products. The supertankers for crude oil would need a 70' deep water channel.

The size of lots for the different industrial enterprises is according to the Solano County Zoning Ordinance. Employment on about 7000 acres may reach about 40,000 - 70,000 workers, depending on type of production. The workers are assumed to live in the established nearby towns of Fairfield - Suisun and Rio Vista or farther away. Industry is well protected by compatible adjacent agricultural land use with no residential uses planned neither in the area nor in the vicinity.

Goal is: To provide lands for industrial growth and development with a minimum of adverse environmental effect and maximum accessibility (road, rail and water).

Policy is: Acceptable industrial growth should be strongly encouraged together with construction of road, rail and harbor transportation facilities. Emphasis is on enterprises which provide employment on a year-round basis, without polluting or otherwise offending the environment.

g. Shopping

The only existing shop is the "Red House" in Birds Landing selling some packed and tinned food items.

(1) Future Meridian Airport related commercial facilities

Discussion Annual travel demand for the Meridian Airport - east of Travis Air Force Base - as finalized in June 1972 by the Regional Airport Systems Study - is to amount to 1 million passengers by 1980 and 6 million by 1985.

The commercial services needed by the passengers have been discussed in interim report No. 8.

On the map 'Land Use & Transportation 1990' an area of about 1500 acres is shown assumed to meet the total commercial shopping needs. The acreage also includes potential uses for

1. Passenger and business related facilities, other than the above
2. Airport support services
3. Freight services
4. Airport related office, industrial and business uses.

The 1500 acres have a potential growth area to the south-west and especially to the north-east.

Goal is: To provide all commercial services needed to enhance the travel potential for air passengers and to meet the needs for air cargo transportation.

Policy is: All commercial facilities should conform to the highest aesthetic standards for the building arrangements, signs, landscaping and overall development.

h. Moving

Transportation and Land Use are intimately related to each other. The location, density and intensity of different land uses will generate different traffic types and volumes. Both elements are shown on the map : Land Use and Transportation 1990.

Transportation is the subject of Chapter 6 of this Report.

D. EFFECTUATION

The implementation tool for the preservation of agricultural lands - the vast majority of all land uses in the Planning Area - is the zoning ordinance. This is also valid for other land uses.

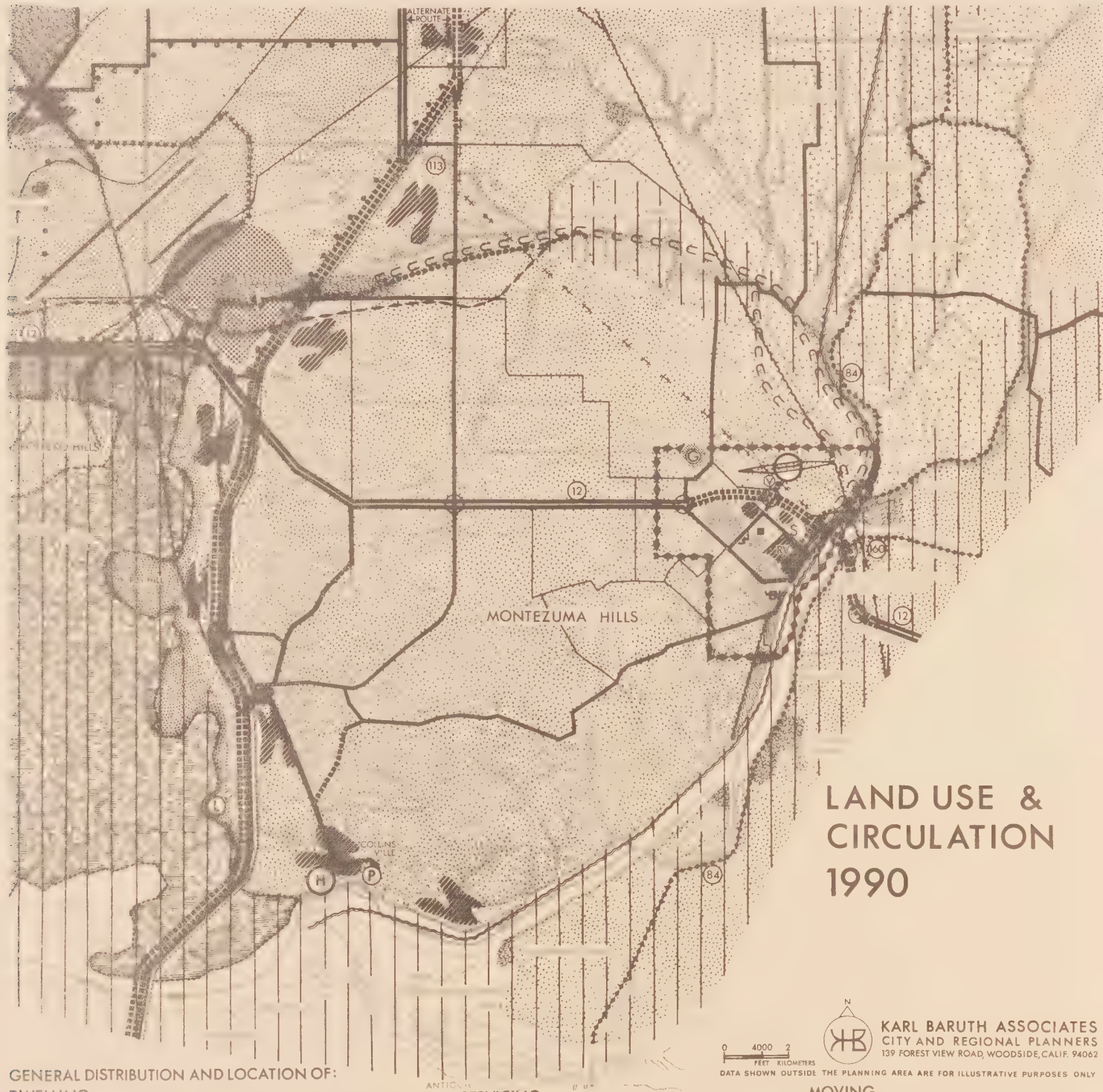
Major airport related activities around the new Meridian airport is to be studied by a "specific plan" in order to assure orderly development of this vital area.

Another priority has water supply. Industrial growth can be stimulated by providing transportation and utilities. The Bureau of Reclamation's water transportation plan via Denverton Channel should be strongly encouraged.

The land use element should be reviewed every 5 years or more often, if major unforeseen development is occurring.

SOUTHEASTERN SOLANO COUNTY PLANNING AREA * CALIFORNIA

CITY OF RIO VISTA AND SOLANO COUNTY PLANNING COMMISSIONS



LAND USE & CIRCULATION 1990

GENERAL DISTRIBUTION AND LOCATION OF: DWELLING

- EXISTING AND PLANNED URBANIZATION
- GOLF AND COUNTRY CLUB COMMUNITY

RECREATING

- GOLF COURSE
- POSSIBLE OFFROAD RECREATION VEHICLE AREA
- RECREATION AREAS
- GOVERNMENT BEACH
- IMPORTANT HABITAT FOR WATERFOWL & WATER - WATER BODIES & COURSES ASSOCIATED WILDLIFE
- POWER PLANT RECREATION AREA
- SUISUN MARSH
- SUISUN MARSH TRANSITION AREA

WORKING

- INTENSIVE AGRICULTURE
- EXTENSIVE AGRICULTURE
- GENERAL MANUFACTURING INDUSTRY

SERVICING

- P.P.G. & E. POWER PLANT
- LIQUID WASTE DISPOSAL PLANT

- DENVERTON CHANNEL
- NORTH BAY AQUEDUCT
- SPECIFIC PLAN AREA BOUNDARY
- SPHERES OF INFLUENCE (5/7/1973):
- RIO VISTA
- SUISUN
- FAIRFIELD

LEARNING

- HIGH SCHOOL

SHOPPING

- MERIDIAN AIRPORT RELATED COMMERCIAL
- SHOPPING CENTER

MOVING

- 1973 FREEWAY ROUTE
- ARTERIALS
- COLLECTORS
- ROAD IN SCENIC AREA
- RIDING, HIKING & BICYCLING TRAILS
- RAIL TRANSIT (FUTURE)
- RAILROAD
- MERIDIAN CIVILIAN AIRPORT
- RIO VISTA MUNICIPAL AIRPORT
- FUTURE POSSIBLE R.V. AIRPORT
- AIRPORT HAZARDOUS ZONES
- H COLLINSVILLE HARBOR (ESTIMATE)
- WATERWAY USES
- DEEP WATER CHANNEL
- SCREENING OF INDUSTRY
- EARTHQUAKE FAULTS



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PART I. CHAPTER 6. CIRCULATION ELEMENT

A. TRANSPORTATION OVERVIEW

Two agencies are now in process of transportation planning for the area, the 9 Bay Counties Regional Metropolitan Transportation Commission (MTC) and the State's Business and Transportation Agency, which is now preparing the inter-regional Sacramento -Stockton - San Francisco Bay Area Corridor Study.

1. Metropolitan Transportation Commission

The California Legislature, seeing the need for improved coordination and planning of transportation services on a permanent basis, created the Metropolitan Transportation Commission in 1970 by enacting Assembly Bill 363. In addition to planning, the Legislature gave MTC the authority to guide and direct future transportation development in the Bay Area according to its plan, following the BATSC*study.

The first general area of major concern the Commission must address is the relationship of land use and transportation in a regional planning context. Land use and transportation have a cyclical relationship because the development of land creates a need for transportation facilities, and, when these facilities are provided, more land development occurs. There is need to establish safeguards so that the Region's human and natural resources do not suffer.

The MTC will have to consider the need for transportation to a certain area, and if transport needs are evident, decide how to meet the need in a way that is complementary to the overall Regional Transportation Plan. Although the Commission will be making decisions on specific transportation issues, the decisions must reflect the needs of the entire region.

The Preliminary Plan of MTC has been presented in December 1972. The plan includes Major Highways, Transbay Bridges and Mass Transit Systems. A copy of the Preliminary Plan is available at the City Hall, Rio Vista, City Administrator's Office. MTC's Final Plan has been adopted on June 30, 1973.

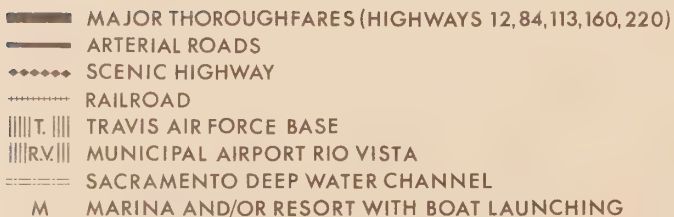
The MTC also administers applications for federal transportation funding.

2. Sacramento - Stockton- San Francisco Bay Area Corridor Study

This is a 2-year study under the State's Business and Transportation Agency. The purpose is to develop a short-range (1980) and long-range (1995) transportation plan for the corridor by the end of 1974. The travel modes consist of road, rail and air facilities. The corridor Study is supported by MTC staff input.

* Bay Area Transportation Study Commission.

CITY OF RIO VISTA AND SOLANO COUNTY PLANNING COMMISSIONS



3. Other Studies

a. Association of Bay Area Governments Regional Plan, 1990

ABAG published in 1970 their proposal, including transportation for the Southeastern Solano County Planning Area, related to the BATSC report, 1969.

At that time a freeway via Van Sickle Island and across the Montezuma Hills into Yolo and Sacramento County was proposed. No transit system into Solano County had then been recommended. The ABAG transportation element of the Plan is now delegated to MTC. The final and adopted version of the MTC Plan is now the Transportation Element of the ABAG Plan.

b. Solano County General Plan

The in 1967 adopted General Plan tentatively locates a freeway route from Contra Costa County via the existing Antioch Bridge and over the Montezuma Hills into State Highway Route 113.

An important transportation feature is a proposed railroad line to Rio Vista.

c. Southeastern Solano County Planning Area

The in 1957 adopted General Plan shows a proposed railway feeder into the Rio Vista industrial area. The existing municipal airport is proposed to be moved about 1500 feet further north. State Highway 12 bypass is proposed to be routed from Church Road along the southwestern border of the existing airport. The Southeastern Solano County General Plan has been updated and is the subject of this Report.

B. FUTURE AREAWIDE TRANSPORTATION, 1990

Discussion The Area's population is assumed to grow from 4,136 (1970) to about 11,500 residents plus 1,603 estimated daily visitors to the Rio Vista Delta area by 1990.

Employment centers (40,000 - 70,000 workers) are planned around the greater Collinsville harbor industrial area and further north towards the Meridian Airport (6 million passengers) and commercial service area (8,950 employees). These are the major traffic generators, as can be seen on the Map "Land Use & Transportation, 1990".

Goals are: To recognize the close interdependence of land use and development with transportation planning.

To provide for maximum possible mobility (road, rail, air and water) for all age groups and to connect the destination nodes in the area in an efficient and economical way.

To develop a system of roads through scenic areas to encourage tourism in the Rio Vista Delta area.

Policies are: Each mode of transportation (road, rail, air and water) should be utilized in concerted action by government and private sector.

Public transit transportation (bus) should be strongly encouraged to end the "isolation" of Rio Vista and to allow more citizens to visit the Rio Vista Delta area.

Roads passing through scenic areas should be protected.

C. ROAD TRANSPORTATION

1. Vehicle registration and traffic volumes

The increase in road traffic is illustrated by the fact that Solano County had 381 autos per 1,000 population in 1961 and 482 autos in 1971. The highest traffic volume is on Highway 12, as illustrated on the Map. The type of registration is shown in the following Table.

TABLE 6-1 REGISTRATION OF MOTOR VEHICLES BY TYPE, 1962 - 1972

Type	1962	1967	1972
Passenger Vehicles	58,487	73,800	88,848
Commercial Vehicles	8,472	12,100	15,647
Trailers	8,046	10,200	13,792
Motorcycles	802	2,880	5,816
Total	75,807	98,980	124,103

Sources: "California Statistical Abstract" and
"Department of Motor Vehicles, Sacramento", 1972.

Traffic counts on County roads are shown in Table 6-2.

2. Roadside Rest Area

During the early 1960's the Board of Supervisors adopted the "Plan of Roadside Rest" which includes one site within the Southeastern Solano County Planning Area. When Highway 12 will be planned to be upgraded to freeway standards, the site should be included in the design.

Location: On Route 12, seven miles east of Fairfield-Suisun City at

Highway Engineer's Station No. 380-00.

Approximate Area: 1/2 Acre.

Suggested Improvements: Parking area, landscaping, tables, trash receptacles.

Supporting Statement: Shade provided in eucalyptus grove. General area otherwise devoid of tress. Farcel contiguous to highway right-of-way and is already under State ownership.

TABLE 6-2 TRAFFIC COUNTS ON COUNTY ROADS
24 hours, 1972 at selected dates

Location	Number of Vehicles
Creed Road	22
Lambie Road	77
Goose Haven Road	52
Little Honkerbay Road	27
Shiloh Road	147
Hopkins Ravine Road	25
Collinsville Road	201
Birds Landing Road	122
Montezuma Hills Road	234 (nr. Rio Vista)
Currie Road	39
McCloskey Road	46
Azevedo Road	32
Liberty Island Road	458
Airport Road	572
Church Road	394
Ryer Road East	252 (nr. Ferry)

Source: County Department of Public Works

3. The Area's Road System

The area's road system is divided into four types of roads for the purpose of this Plan as shown on the map "Circulation 1973".

- a. Freeway (State Highways)
- b. Arterials
- c. Collectors
- d. Roads in Scenic Areas. (Scenic Highways)

This system of roads described in this General Plan should be identical with the County's select system.

SOUTHEASTERN SOLANO COUNTY PLANNING AREA * CALIFORNIA
CITY OF RIO VISTA AND SOLANO COUNTY PLANNING COMMISSIONS



a. Existing and proposed freeways

These thoroughfares are multi-laned, divided, landscaped, grade separated and limited in access to points of traffic interchange. They provide for high speed, high volume inter-regional, as well as inter-sectional county traffic.

The existing freeways are State Highways 12 and also 113 as shown on the map "Circulation 1973".

The proposed freeways are Highways 12 and 113. Highway 12 is to be rerouted in the Rio Vista area in connection with a new bridge over the Sacramento River. The Highway 12 construction to freeway standards at Lambie Road will consider the preservation of the native bunch grass, a plant of ecological interest.

Highway 113 is proposed to be rerouted in the future from the crossing with the Sacramento Northern Railway to follow parallel the railway tracks. This is recommended in order to provide connections to the key destinations: Meridian Airport and commercial service area, industrial area towards Collinsville harbor and the new Transbay Bridge. Highway 113 is to be connected with Pedrick Road.

The Preliminary Plan by the Metropolitan Transportation Commission uses BATSC new Mass Transit System for Southeastern Solano County after 1980, together with a new Freeway and a new Transbay Bridge connecting Contra Costa County (west of Pittsburgh) and Solano County via the Van Sickle Island. The transit line follows a straight line north to Travis and Meridian Airports and turns then west to connect with the new cross-county transit system. The new freeway is mapped to connect to the State Highway Route 113 via the Montezuma Hills.

The Chipps and Van Sickle Island crossing from Contra Costa County connecting to State Highway Route 113 in Solano County represents the route recommended already in 1969 by the Bay Area transportation Study Commission (BATSC) and adopted in 1970 by the Association of Bay Area Governments (ABAG). The route follows on Van Sickle Island the old Railroad Grade of the Sacramento Northern Railroad. The in 1973 adopted plan by the Metropolitan Transportation Commission shows the need of a Contra Costa County - Solano County Transportation Corridor on the map, but without specifying exactly the Van Sickle Island crossing. The State's Sacramento - Stockton - San Francisco Bay Area Corridor Study will deal with that Transportation Corridor location in their 1974/1975 report.

The planned major land use, the industrial development along the existing Sacramento Northern Railway and the existing Collinsville and Shiloh Roads represent a major factor in location of transportation facilities. Another factor is the environmental sensitivity of the Montezuma Hills which does not encourage a freeway routing through the hills.

It is proposed by your Consultant to create a "Transportation Corridor" along the existing rail and road facilities including also all utility lines. This proposal was discussed with members of the technical staff of MTC and a general agreement was tentatively reached to show the "Transportation Corridor" concept on the Southeastern Solano County General Plan. The location of the corridor through the industrial area is only shown diagrammatically and is to be decided upon at a later stage.

The fine cooperation of the MTC technical staff and the Community Affairs Coordinator is hereby warmly acknowledged.

b. Existing and proposed arterials

These roads serve for high volumes of traffic flow and as major links between communities and they provide convenient movements between freeways. The recommendations on County highways priorities are considered by the "Transportation Council of Solano County".

The arterials shown on the map are:

Creed Road from Highway 113 west;
Liberty Island Road;
State Highway Route 113 and Birds Landing Road;
Collinsville Road; (two lanes in each direction to Collinsville's industrial
Shiloh Road; (industrial development road) area)
Montezuma Hills Road with a proposed reroute to Collinsville;
South of Dutton Road (unnamed);
Stratton Lane.

c. Collectors

These roads provide for traffic flow between arterials and major local roads.

The collectors shown on the map are:

Branscombe Road;
Denverton Road;
Creed Road;
Brown Road;
Robben Road;
Dozier and Hastings Road extension to the east to meet with
Liberty Island Road at Lindsey Slough;
Robinson Road;
Canright Road;
Airport Road; Emigh Road;
Currie Road; Anderson Road;
Azevedo Road; Amerada Hess Corp. 'Road.

- d. Roads passing through scenic areas.

These roads are discussed in Chapter 12 of this Report.

4. Means of Transportation and Place of Work

This section refers to the chief means of travel to and from work. "Worked at home" includes a person who worked on a farm where he lived or in an office or shop in his home.

About 85% of workers in Solano County go to work by private auto and about 8% have to drive outside the SMSA. In the Planning Area about 76% of all workers use a car as a means of transportation to work, 19% drive outside the SMSA, nearly 10% walk to work and about 4% work at home. In the U. S. 80% go to work by car, 8% walk and 3% work at home.

TABLE 6-3 MEANS OF TRANSPORTATION AND PLACE OF WORK - SOLANO COUNTY, SOUTHEASTERN SOLANO COUNTY PLANNING AREA

	Planning Area
All workers	1,628
Private auto : Driver	1,086
Passenger	154
Bus or streetcar	--
Walked to work	159
Worked at home	69
Other	160
Inside SMSA (Standard Metropolitan Statistical Area)	
Vallejo City	1,189
Remainder of Solano County	8
Napa City	--
Remainder of Napa County	--
Outside SMSA	314
Place of work not reported	125

D. RAIL TRANSPORTATION

Discussion The Planning Area is transversed by the tracks of the Sacramento Northern Railroad, a wholly-owned subsidiary of Western Pacific Railroad Company, a transcontinental system.

With the proposed industrial development along the railroads between Collinsville area and north to Highway 12 the importance of rail traffic with freight service to and from all points will greatly increase. In the Preliminary General Plan the Metropolitan Transportation Commission mapped a rail transbay crossing west of Pittsburgh, following abandoned railroad tracks on Chipps and Van Sickle Islands. These tracks are to be used for rail transit serving the 6 million air passengers at Meridian Airport by 1985. Next to the railroads are the freeway lanes planned in one "Transportation Corridor" concept, proposed by your consultant.

The map "Land Use & Circulation 1990" also shows a proposed 12 miles railroad feeder line from the existing Sacramento Northern Railway crossing with Highway 113 into the Rio Vista industrial areas.

Goal is: To encourage a rail transit line and a rail freight system coordinated with the overall transportation system.

Policy is: All agencies concerned should help to make railroads an important element in the transportation system.

E. AIR TRANSPORTATION

Meridian Airport

The Bay Area Regional Airport Systems Study has been aimed at preparing a long range airport systems plan that takes thorough account of all aviation needs. The planning for such a study was begun in December 1967 and recommendations were published in summer 1972. Public hearings were held in autumn 1972, and the final plan was adopted by ABAG on November 30, 1972. As far as the Southeastern Solano County is concerned, the recommendations include a separate runway east of Travis Air Force Base with a - for the time being - joint military-civilian use of the tower. Annual travel demand for the civilian airport is estimated to amount to 1 million annual passengers by 1980 and 6 million annual passengers by 1985.

The runway is shown on the map "Land Use & Circulation 1973" schematically 1 mile parallel to the existing Travis Air Force Base runway. Airport facilities are shown only very diagrammatically and are subject to special planning needs in the future. Access to the airport is proposed by freeway, rail transit and helicopter. No additional airport is proposed for the Planning Area.

The Sacramento - Stockton - San Francisco Bay Area Corridor Study will use the information produced by the Bay Area Regional Airport Systems Study as an input into the Corridor Study along with data developed by the Sacramento Regional Area Planning Commission's Regional Airport Study, which is underway. By the end of 1974 recommendations as to the appropriate modes of transportation to serve the corridor will be presented by the State's Business and Transportation Agency.

F. WATER TRANSPORTATION

Proposals for four new deep-water ports in the San Francisco Bay Area include two ports located in Solano County: Benicia and Collinsville. The proposed port facility at Collinsville is located across Carquinez Strait, northeast from Antioch. Collinsville deep-water access could open much of the Southeastern Solano County to industrial development. Existing rail connections and a proposed freeway access is making the port a most likely facility.

The industrial potential for the area is excellent and can only be heightened by a public harbor at Collinsville. Apart from the harbor, other factors of advantages for that

particular location for industry include: Immediate access to existing rail lines, proposed new freeway and extension north to State Highway 12, no existing nor planned residential areas nearby which could hinder industrial expansion, major airport nearby, outside the coastal fog belt but close to the bay.

The port development would be a concern of the San Francisco Bay Conservation and Development Commission, whose boundaries of priority land use areas include a 100-foot shoreline band and whose General Plan shows a Collinsville deep-water port.

The technical preliminary general study of a deep water port has been prepared by a special Consultant.

POSSIBLE DEEP DRAFT BULK PORT AT COLLINSVILLE, CALIFORNIA
JOHN A. BLUME & ASSOCIATES, Engineers, San Francisco

Studies of maritime commerce and waterfront industry in the San Francisco Bay Area conducted by the Bay Conservation and Development Commission indicated need for a deep draft bulk terminal at Collinsville. It was the recommendation of BCDC that suitable waterfront land be reserved for this type of use and that industries should share the limited deep water frontage.

In ordinary practice, a bulk terminal is a privately owned facility handling a single commodity, generally associated with a processing plant. The BCDC study indicates that the extremely high cost of efficient, mechanized loaders and unloaders together with the scarcity of suitable deep-water industrial sites in the Bay Area will make the concept of a public owned multi-purpose bulk terminal a logical possibility. This type of facility has been assumed for the purpose of this plan.

It is assumed that a terminal with three berths will be adequate for the near future assuming normal development of Solano County in the areas designated for industrial use. Since the construction of a steel plant is one of the planned industries, it is reasonable to assume that two thirds of the materials handled could be dry bulk cargo and that one third might be liquid materials. It is assumed that, in general, imports might consist of iron ore concentrate, coke, copper ore, phosphate, chemicals, liquid fertilizer, fishmeal and other items. Exports might consist of grain, feed pellets, scrap, bulk wine, chemical products, and other items. It is expected that the greatest use for a bulk terminal would be in raw material imports rather than exports.

The bulk terminal should be adequate in size to handle up to 2 million tons per year. Approximately 10 to 15 acres for back-up space should be available behind each dry bulk berth for stock piles, transfer equipment, etc. and up to 20 acres should be available behind a liquid bulk berths for pumps, tanks, piping, etc. It is assumed that the dry bulk carriers calling at the proposed port of Collinsville will be smaller than 60,000 dead weight tons. Ships of this size can be expected to be approximately 750 feet long and will require channel depths of at least 45 feet. Bulk carriers for liquids other than petroleum will probably be of about 25,000 dwt. and will require channel depths of at least 35 feet.

A bulk terminal consisting of a wharf alongside the existing Sacramento Ship Channel and connected to shore by a pier extending over Chain Island was considered to minimize dredging and potential silting, however this idea was discarded in favor of a marginal wharf alongshore with dredged approach channels because of the advantages of lower construction cost and shorter conveyor lines. An enclosed basin was not considered practical because of the problem of severe silting which would almost certainly ensure.

An idealized layout of a bulk terminal is shown in the illustration "Diagrammatic Plan of Deep Draft Bulk Port at Collinsville". The plan utilizes a wharf 2200 feet in length with a 300 foot wide, circular approach channel dredged to 45 foot depth. Two of the bulks are intended for dry, "flowable" bulk cargos. Loading or unloading would be accomplished by a movable mechanical device operating together with conveyor belts between the material stockpiles and the wharf. Stockpiles of bulk material could be either in exposure or in covered storage.

The liquid bulk berth would not necessarily require a full length marginal wharf if mooring dolphins were used in conjunction with a short central wharf containing loading/discharging hoses and apparatus.

Port operation would require buildings for administration, security and dispatch, and equipment maintenance although some, or all three of these buildings could be combined. The site shown on the diagrammatic plan would require considerable filling to build the land up to the level of the top of the levees. Fill from the channel dredging could be used for this purpose. Adequate land access and rail connections would also be required.

Construction of the proposed bulk port under public ownership could be implemented by formation of a port district under the applicable sections of the California Civil Code. Such a district could accomplish required engineering and economic feasibility studies and acquire the necessary land ownership. Studies of potential silting problems would be a vital consideration in final planning for the port.

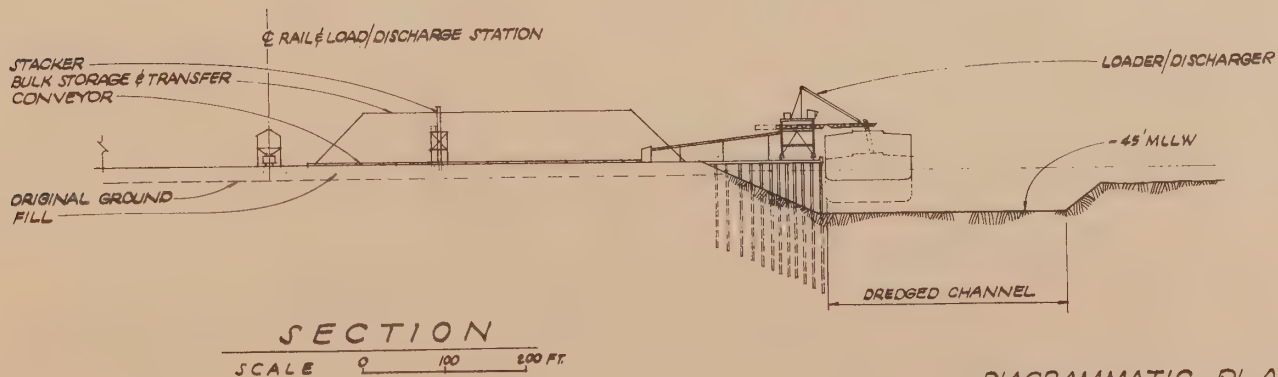
Construction of the port could be accomplished by means of port district general obligation or revenue bonds to accomplish basic site work, construction of the marginal wharfs, and connecting road facilities. Installation of ship loaders, conveyors and similar equipment as well as rail lines could be accomplished by the port lessees.

G. EFFECTUATION

The instrument for the implementation of the road, rail, air and water transportation facilities is cooperation with the appropriate federal, state and regional agencies. On local level the implementation tools are provided through the County's Public Works Department and the Planning Department in accordance with the policies expressed in this element, and as approved by the legislators.



PLAN
SCALE 0 500 1000 FT.



DIAGRAMMATIC PLAN OF
DEEP DRAFT BULK PORT
AT COLLINSVILLE, CALIF.

JOHN A. BLUME & ASSOCIATES, ENGINEERS
SHERATON-PALACE HOTEL SAN FRANCISCO

PART I. CHAPTER 7. HOUSING ELEMENT

SECTION I. PURPOSE AND NEEDS

A. STATE LAW REQUIRING HOUSING ELEMENT

Legislation states that local general plans shall include:

Title 7, Government Code Sections 65302 (c):

"A housing element, to be developed pursuant to regulations established under Section 37041 of the Health and Safety Code, consisting of standards and plans for the improvement of housing and for provision of adequate sites for housing. This element of the plan shall make adequate provision for the housing needs of all economic segments of the community. "

B. INTERGOVERNMENTAL COORDINATION

Southeastern Solano County and the City of Rio Vista are jointly involved in the housing element planning process. Southeastern Solano County's housing problems in contrast to Rio Vista's - is part of a countywide approach. The County already adapted in 1969 a county-wide Housing Element, Phase I.

C. INTERAGENCY COORDINATION

Coordination with Housing plans of other agencies is assured through cooperation with local public and quasi public bodies (Planning Commissions and legislature), regional bodies (ABAG, CIR), State (Division of Housing and Community Development) and other agencies.

D. RELATION TO OTHER PLAN ELEMENTS

The Housing Element is part of the nine mandatory elements to be prepared for the Southeastern Solano County General Plan Program. Housing is planned to develop only in the Rio Vista urban growth area. Only 1001 persons live dispersed throughout the Planning Area in 391 units.

E. CITIZEN PARTICIPATION

A cross section of the citizenry is organized into seven committees including one Citizen Committee on Housing. This Committee consists of members of the City of Rio Vista and of the rural areas of the Southeastern Solano County Planning Area.

SECTION 2. GOALS

One broad goal for Southeastern Solano County Planning Area Housing Element has been identified. The goal is listed below and has been adopted by the Citizen Committee on Housing. The goal is:

To promote and insure the provision of adequate housing for all persons regardless of income, age, race, or ethnic background related to agricultural-rural development.

SECTION 3. PROBLEMS

As can be seen in the statistical data, there is only a relatively small percentage of deteriorating or delapidated houses. This does not represent a housing problem.

A. INVENTORY OF EXISTING HOUSING UNITS, 1970

The County lands of the Southeastern Solano County Planning Area had 2,144 persons living in 542 housing units by 1960. This included a high percentage of population in group quarters. The mid-1969 special Census by the State shows a decline of population to 906 persons living in 367 housing units. They consisted of 294 single family homes, 19 duplexes or fourplexes and 5 dwellings in one apartment, as well as 49 trailers; 51 units are deteriorating.

About 10 units out of 12 in Collinsville looked as being delapidated to your consultant, and are empty. The Collinsville area is planned to be used for industrial purposes and not for dwelling. Therefore no rebuilding of the empty shacks is planned.

TABLE 7-1 ESTIMATE OF POPULATION AND OCCUPIED HOUSING UNITS, 1970
Southeastern Solano County Lands, excluding City of Rio Vista

Area Description	Population	Housing Units
North & East of Rio Vista (Ryer, Hastings, Prospect Islands, etc.)	450	180
South of Rio Vista	200	80
Birds Landing and Collinsville*	186	68 (Median Age of Structures: 48 years)
North of Birds Landing	165	70

* Area of Zip Code 94512 U. S. Census County, 1970.

B. INVENTORY OF UNITS TO BE REPLACED

The "Association of Bay Area Governments" (ABAG) brought out a procedure for estimating housing replacement for discussions. This procedure is followed in this study and four criteria have been identified and applied in Table 7-2.

1. Living in physically "substandard" housing units
2. Overcrowded
3. Involuntary "doubling"
4. "Overpaying".

TABLE 7-2 CENSUS INDICATORS OF HOUSING NEEDS, 1970
Southeastern Solano County Planning Area

Criterion	1970 Census Classifications	Units
		(18-22)**
Physically Substandard*	a. Lacking one or more plumbing facilities	10-12
Overcrowded	c. Households with 1.01 or more persons per room (1.51 or more persons per room = 14 units)	48-58
Involuntary Doubling	d. Husband - wife subfamilies	n. a.
Overpaying***	e. Households paying 25 percent or more for gross rent	84-104

* Priority replacement

** Estimated distribution: Birds Landing and Collinsville 8-10 (No replacement)
Islands north of Rio Vista 10-12

*** Not estimated for owner-occupants.

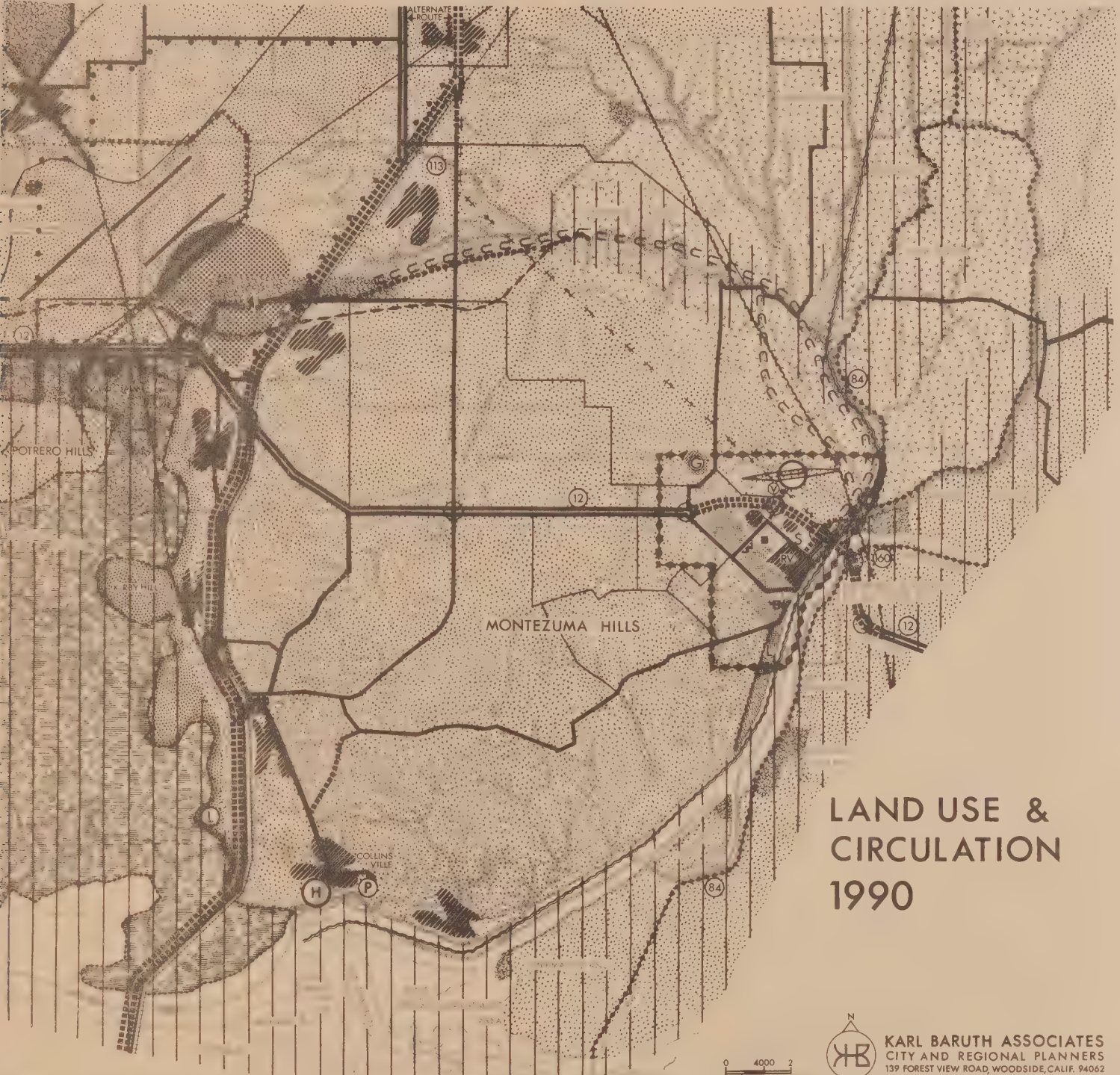
C. DESCRIPTION OF HOUSING NEEDS, 1970

To arrive at a statement of what units are required to serve the households identified as needing housing, it was necessary to translate the data on households which are overcrowded and overpaying into descriptions of what would be appropriate. Households in the "physically substandard" group were assumed to need standard housing of the same rent or value and size as the units occupied.

The statement of total housing needed will be produced by consolidating the 4 categories shown in the following Table 7-3.

SOUTHEASTERN SOLANO COUNTY PLANNING AREA * CALIFORNIA

CITY OF RIO VISTA AND SOLANO COUNTY PLANNING COMMISSIONS



LAND USE & CIRCULATION 1990

GENERAL DISTRIBUTION AND LOCATION OF:

- DWELLING**
- EXISTING AND PLANNED URBANIZATION
 - GOLF AND COUNTRY CLUB COMMUNITY
- RECREATING**
- GOLF COURSE
 - POSSIBLE OFFROAD RECREATION VEHICLE AREA
 - RECREATION AREAS
 - "GOVERNMENT BEACH"
 - IMPORTANT HABITAT FOR WATERFOWL & WATER - WATER BODIES & COURSES
 - ASSOCIATED WILDLIFE
 - POWER PLANT RECREATION AREA
- WORKING**
- INTENSIVE AGRICULTURE
 - EXTENSIVE AGRICULTURE
 - GENERAL MANUFACTURING INDUSTRY

- SERVICING**
- P.R.G. & E. POWER PLANT
 - LIQUID WASTE DISPOSAL PLANT
- DENVERTON CHANNEL
- NORTH BAY AQUEDUCT
- • • SPECIFIC PLAN AREA BOUNDARY
- SPHERES OF INFLUENCE (5/7/1973):**
- RIO VISTA
 - SUISUN
 - FAIRFIELD

- LEARNING**
- HIGH SCHOOL
- SHOPPING**
- MERIDIAN AIRPORT RELATED COM-MERCIAL
 - SHOPPING CENTER

- MOVING**
- 1973
 - PROPOSED
 - FREEWAY ROUTE
 - ARTERIALS
 - COLLECTORS
 - ROAD IN SCENIC AREA
 - RIDING, HIKING & BICYCLING TRAILS
 - RAIL TRANSIT (FUTURE)
 - RAILROAD
 - MERIDIAN CIVILIAN AIRPORT
 - RIO VISTA MUNICIPAL AIRPORT
 - FUTURE POSSIBLE R.V. AIRPORT
 - AIRPORT HAZARDOUS ZONES
 - COLLINSVILLE HARBOR
 - WATERWAY USES
 - DEEP WATER CHANNEL
 - SCREENING OF INDUSTRY
 - EARTHQUAKE FAULTS
- LEGEND**
- PROPOSED
 - GRADE SEPARATION
 - 1973
 - PROPOSED
 - RV
 - ESTIMATE

TABLE 7-3 HOUSING NEEDED, 1970
Southeastern Solano County Planning Area, excluding Rio Vista

Physically Substandard*	18-22**
Overcrowded***	30-40
Overpaying****	40-60
	<u>88-122</u>
Vacancy rate at 6 percent*****	<u>5- 7</u>
Total Housing Units	93-129

* Priority replacement

** Estimated distribution: Birds Landing and Collinsville 8-10 (No replacement)
Islands north of Rio Vista 10-12

*** To be replaced

**** High rent can be minimized by rent subsidy, public-housing or a greater vacancy rate.

***** A 6 percent vacancy rate permits mobility and a degree of choice in housing.

D. INVENTORY OF EXISTING LANDS

Nearly all of the 285 square miles of the Southeastern Solano County Planning Area are agriculturally used. Housing is in Rio Vista only and the 367 dwelling units are widely dispersed in the agricultural-rural areas.

E. POPULATION CHARACTERISTICS

Since the great majority of the area's residents live in Rio Vista, the statistics dealing with general social and economic characteristics as required by the State's guidelines are shown in Part II together with the City of Rio Vista's Housing Element. The list of statistics include:

Occupancy, utilization and financial characteristics of Housing Units;
Structural equipment, and financial characteristics of Housing Units;
Income;
Family composition;
Means of transportation and place of work;
Residence in 1965 - 1970.

F. NEED

1. Current

All housing types of current need - owing to be substandard - are of the single-family rural type. They are widespread all over the Planning Area.

2. Future

Besides the need to remedy existing housing deficiencies in the Southeastern Solano County Planning Area, there will be a need to provide housing for new rural residents. All future housing near Rio Vista is assumed to be annexed by the City and is discussed in the City's Housing Element of this report. Current forecasts are shown in the following Table.

TABLE 7-4 POPULATION AND HOUSING UNITS 1970, 1980, 1990
Southeastern Solano County Planning Area, excluding Rio Vista

Year	Population	Housing Units
1970	1,001	391
1980	1,750	585
1990	2,500	835

During the next two decades about 4,250 new residents are expected to dwell in about 1,420 new housing units, or about 84 new annual units for 17 years. This is a figure exceeding all former years.

The figures do not include the now substandard dwellings to be replaced north of the City of Rio Vista (10). Neither are the units included to become substandard until 1990.

G. REHABILITATION PROJECTS

The rehabilitation of houses is enforced in the Southeastern Solano County Planning Area through codes. There are no Housing Authorities nor Redevelopment Agencies in the Planning Area.

SECTION 4. OBSTACLES

The following represents possible obstructions which may impede attaining the objectives of the housing plan.

A. POLITICAL

1. Discrimination

There is no official housing market discrimination in the Southeastern Solano County Planning Area by reasons of race, sex, family size or ethnic background.

B. ECONOMIC

1. Land Value

Rural land values about \$1,000.00 per acre depending on agricultural soil quality; advertisements in the "River News Herald", Rio Vista listing 4-bedroom older home on 30 acres for \$50,000.

2. Tax Structure

About half of the land in the Planning Area is within the regulations of the California Land Conservation Act of 1965. Solano County had assessed property for 1972 - 1973 at 23.8 percent of actual value. Property tax rate per \$100 assessed valuation for the Fiscal year 1972-1973 was \$3.28.

3. Income

The identification of those impediments which prevent the expected needs from being met is - first of all - an inadequate family income.

4. Allocation of State and Federal Funds.

No funds for housing are now allocated or applied for from the state or the federal government in the Southeastern Solano County Planning Area.

C. INSTITUTIONAL OR GOVERNMENTAL

Processing time of building permits in the County is streamlined. The County's Planning Commission meets twice a month and the County's Planning Commission office is open daily.

The Building Codes are up to date. There are no Union restrictions.

Zoning Ordinances in the County do clearly outline the different zoning districts and permitted uses.

D. PHYSICAL

Availability of electricity for the large agricultural-rural areas with farm houses is assured through P.G. & E. Septic tanks are used and water is provided through wells.

SECTION 5. HOUSING PROGRAM

A. METHOD

The Housing Element for the County land within the Southeastern Solano County Planning Area intends to define a goal for housing and rural-residential development and intends to establish policies aimed at achieving this goal.

In the following the goal is presented with a policy statement to reach the goal and implementation step which should always include wide participation of citizen groups. This implementation action is expected to have a short-range impact on the housing situation. Accountability rests with the Solano County Planning Commission and Board of Supervisors.

B. GOAL, POLICY AND IMPLEMENTATION

1. GOAL

To promote and insure the provision of adequate housing for all persons regardless of income, age, race, or ethnic background related to agricultural-rural development.

a. Policy

Solano County should work in cooperation with developers of rural housing areas.

b. Implementation

County's Government should establish as an official policy the encouragement of providing also low- and moderate - income housing for families, singles or other persons related to agricultural - rural development.

C. HOUSING NEAR RIO VISTA

All housing on County lands is planned to develop to the northeast of the City of Rio Vista.

All urban development should be annexed to the City of Rio Vista. Water supply and sewer plant sites are both big enough to allow plant additions. The areas to be annexed are within the "Sphere of Influence" of the City as adopted by the Local Area Commission, May 7, 1973.

SECTION 6. REVIEW AND UPDATE

A. CONTINUING HOUSING DATA

The Housing Element of the General Plan should be regularly updated and for that purpose housing data are needed.

The building department of Solano County is the central source of housing data relating to construction, demolition and rehabilitation.

B. ANNUAL CITIZEN REVIEW - BIENNIAL UPDATE

1. Annual Citizen Review

The annual review should incorporate:

a. Discussion of progress towards the housing goal mentioned above. Evaluation of how many new housing units have been constructed during the year. Measurement of the housing costs and determination of whether such dollar rates can produce a proper supply in relation to demands.

b. Determination of demographic changes in the Planning Area. Determination of whether there are unexpected changes in the size and composition of the South-eastern Solano County's population which might suggest adjusting the Housing Element's action programs.

2. Biennial Update

The mandatory two-year review period should produce:

a. If found necessary by the Citizens' Review Committee, preparation of a revised, updated and printed Housing Element. This should describe progress in achieving the housing goals of the Planning Area, make suggestions for improvement of the rate of progress - if necessary -, and suggest appropriate changes in the Housing Element or in other elements of the Planning Area's General Plans. The report should present recommended programs for the next two years.

b. Consideration by the Board of Supervisors of the updated report with either amendment, reaffirmation or adoption of the appropriate action program for the ensuing two years.

A review procedure at two years interval insured concern with the housing needs and attention for the continued improvement of housing conditions in the Southeastern Solano County Planning Area.

The adopted Housing Element and the changes every two years must be mailed to the

Department of Housing and Community Development
1121 "O" Street, Rm. 3344
Sacramento, California 95814

PART I. CHAPTER 8. CONSERVATION ELEMENT

A. WATER

Discussion The sources of water now being used in the Planning Area are surface ground-water. No reservoirs exist nor any water of significance is imported. The use of the groundwater is - apart from urban use by Rio Vista - for agricultural purposes on lands zoned "Exclusive Agriculture".

The ground-water table is high in the flat plain of the Montezuma Hills. All ground-water recharge from the higher elevation lands migrates to this area and natural drainage of subsurface water from this area is sluggish. As the results of winter rains the ground-water tables remain high.

Well yield in the Montezuma Hills is classified as "adequate for light industry, but inadequate to marginal for irrigation, heavy industry and municipal uses".

Ground-water data derived from a brief reconnaissance survey indicates a scarcity of usable ground-water in the Montezuma Hills area. There has been very little development of the limited ground-water resources of the area during the past years. Safe ground-water yield of the entire service area is estimated by the U. S. Bureau of Reclamation at about 5,000 acre-feet per year at the present time. Due to the projected development of irrigated agriculture on lands in the service area, future ground-water supply is estimated at about 13,000 acre-feet per year. Water use through ground-water wells is found only in the north-eastern part of the Planning Area.

The rich agricultural islands to the north of Rio Vista, with water supplies furnished from the Delta channels, comprise most of the 41,700 acres of presently irrigated lands. The Delta sloughs within the Planning Area are the Cache, Lindsey, Barker, Maine Prairie, Prospect, Shag, Haas, Steamboat, Miner, and Elkhorn Sloughs.

Goals are: To preserve the surface waters and water related areas of the Sloughs for many important purposes for man, such as: Supply of drinking water, public safety, support of eco-system, recreation, scenic beauty, and as marshland habitat for water-fowl and water-associated wildlife.

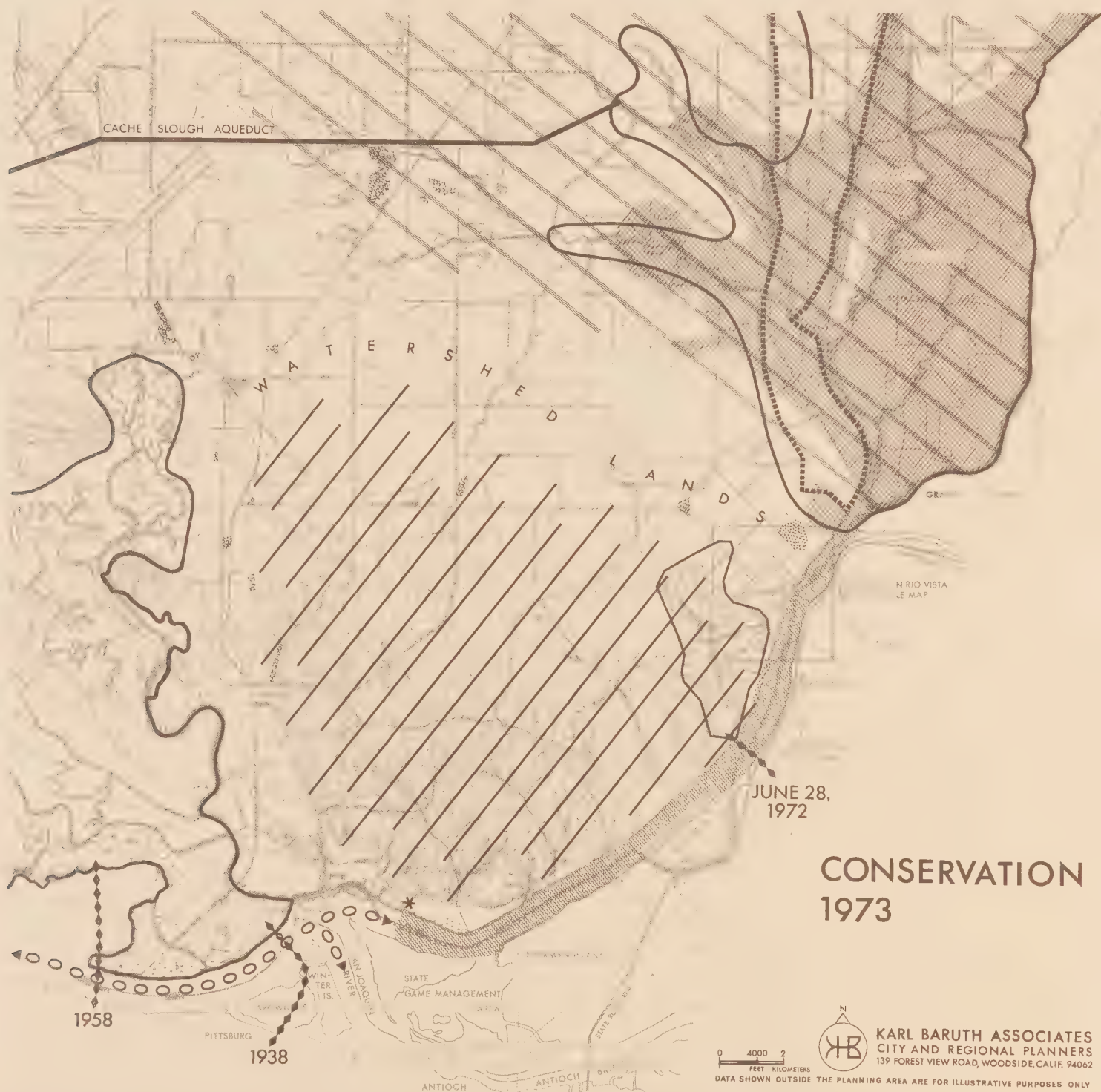
To preserve areas necessary for the replenishment of the ground-water table.

Policies are: Water management agencies should give consideration to the open space - recreational - ecological value of water-related areas while providing water supply and flood control measures.

Ground waters should be conserved, managed and protected for full utilization, whenever possible to meet water demands.

SOUTHEASTERN SOLANO COUNTY PLANNING AREA * CALIFORNIA

CITY OF RIO VISTA AND SOLANO COUNTY PLANNING COMMISSIONS



CONSERVATION
1973

WATER RESOURCES

- ◆◆◆ SALTWATER-SWEETWATER BOUNDARY
- LEVEES FORMING AREAS SUBJECT TO CONTROLLED INUNDATION
- /// AREA OF HIGH WATER LEVEL
- /// AREA OF NO SIGNIFICANT GROUNDWATER
- AQUEDUCT

LAND RESOURCES

- /// EXCELLENT AGRICULTURAL SOIL
- CONCENTRATION OF NATURAL GAS WELLS
- SAND PITS
- SPOIL DEPOSIT AREA "GOVERNMENT BEACH"
- SHOALS

VEGETATION RESOURCES

- MAJOR GROUPS OF TREES
- ▲ NATIVE CLUMP GRASS (BUNCH GRASS)

WILDLIFE RESOURCES

- GENERAL OUTLINE OF WATERFOWL HABITAT AND WATER-ASSOCIATED WILDLIFE
- SACRAMENTO RIVER SPORTFISHING AREA
- ANADROMOUS FISH RUN

CULTURAL/URBAN RESOURCES

- * HASTINGS ADOBE



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Most of the Planning Area's future water requirements and supply demands have been studied recently by the U.S. Bureau of Reclamation. The results are shown in the following Table. At the time the proposal is reviewed by the State Department of Water Resources, the State may or may not concur in the findings and recommendations.

TABLE 8-1 ANTICIPATED WATER USE, MONTEZUMA HILLS UNIT

Year	Municipal and Industrial (acre-feet)	Irrigation (acre-feet)	Fish and Wildlife (acre-feet)	Total (acre-feet)
1980	65,300	10,000	150,000	225,300
1990	83,400	98,900	150,000	332,300
1995	98,000	148,200	150,000	396,200
2000	112,500	148,200	150,000	410,700
2080	112,500	148,200	150,000	410,700

B. SOILS

Discussion The following information has been derived from a soil report of non-farm interpretation of Solano County prepared by the U. S. Department of Agriculture Soil Conservation Service, Dixon. Detailed soil surveys must be made for operational planning purposes. A new soil survey is now expected to be published by Spring 1974.

1. Description of the Soils

There are 17 different kinds of soil areas noted in Solano County of which 13 different kinds are located in the Southeastern Solano County Planning Area and are shown on the 'General Soil Map'.

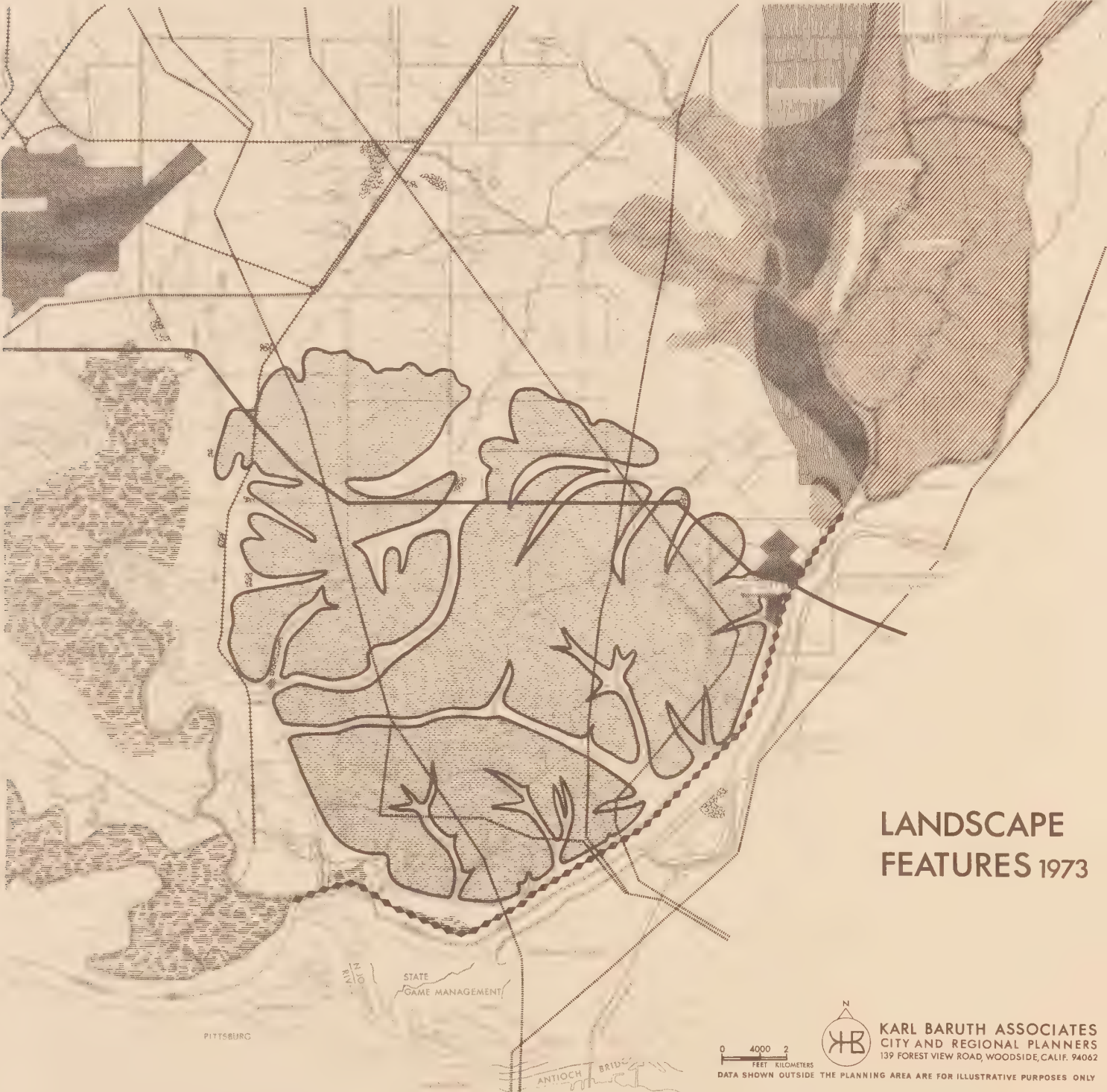
Some non-agricultural soil interpretation from the map for the Planning Area are discussed in the following in very general and broad terms only.

a. Hydrological soil groups are those with very slow infiltration rates when thoroughly wetted and have a high run-off potential. The soils consist chiefly of clay.

b. Soil limitations for septic tank filter fields are severe. In very general terms - although not necessarily applying to all of the Planning Area - soils have a very slow permeability rate, a high seasonal water table, a drainage class of poor to very poor.

c. Soil limitation for foundation soil pressures is generally moderate owing

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LANDSCAPE
FEATURES 1973

MAJOR PHYSICAL CHARACTERISTICS

- HILLY AREAS
- EXCELLENT AGRICULTURAL SOIL
- MAJOR WOODED AREAS
- RIVER FRONTAGE
- AREAS SUBJECT TO CONTROLLED INUNDATION
- MARSH

FUNCTIONAL ACTIVITIES

- STATE HIGHWAY ROUTE 12
- RAILWAY
- MAJOR POWER TRANSMISSION LINES
- URBANIZED AREAS 1973



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to loamy soils and high shrink - swell clays. In the northeastern corner of the Planning Area the limitations are severe owing to soils with high but varying organic matter content.

d. Soil shrink - swell behavior classes show high shrink - swell activities. The northeastern corner of the Planning Area shows a high shrink - swell soil characteristic.

2. Soil Capability Classification

The method of soil rating used in this Section is based on soil characteristics that govern the land's potential utilization and productive capacity. The soil rating index has been developed by R. Earl Storie of the University of California.

Eight different soils have been noted in the Planning Area according to the Storie Index and are illustrated on the map 'Soil Capability Classifications'. Excellent soil exists only in the northeastern corner of the Planning Area. Parts of the lands north of Highway 12 are rated from poor to good. The Montezuma Hills are generally rated as fair.

A soil capability classification based on a 1930 survey and classified according to the R. Earl Storie rating classifies the northeastern corner of the Planning Area as "Excellent" agricultural soil.

Many types of agricultural soils are now in agricultural use and contracted as agricultural preserves.

3. Soil Erodibility

Discussion Erosion is the process in which soil or soil-like material is removed from one area and transported to other areas largely by means of moving water.

Soil erodibility is termed only "moderate" in the Montezuma Hills area and "low" in the remaining Planning Area.

Goal is: To avoid damage to health and property owing to erosion.

Policy is: Engineering geology investigation results should be part of each development application within hazardous areas. Strict grading ordinance should be adopted and enforced. The Ordinance as described in Chapter 10 under 2. Recommendations shall apply.

C. FISH AND WILDLIFE

Discussion

1. Fish

In contrast to natural gas, fish and wildlife is a renewable resource. Anadromous fisheries sustain harvests so long as spawning and nursery grounds are maintained by freshwater flows through the Sacramento - San Joaquin Delta. Flow stoppage, an irreversible act, would destroy the fisheries. Another point of consideration is the intense Bay - Sacramento - San Joaquin Rivers Junction for the anadromous fish-run. In the same water the used and pre-cleaned water from future industrial operations will have to be disposed.

2. Wildlife

Perhaps the most dramatic effect has been the disappearance of the estuarine marshlands. This has had a direct bearing upon the reduction of waterfowl populations utilizing this major stop of the Pacific Flyway. Loss of feeding and resting areas, utilized by shorebirds has been a serious factor in their reduction.

The Sacramento River bank protection work by the U.S. Corps of Engineers was originally authorized as a protection for the existing levee system. The work in the future will include proposals for vegetation plantings and other environmental features. The maintenance is a non-federal responsibility.

Goals are: To maintain all species of fish and wildlife for ecological and recreational value.

To preserve natural vegetation in its virgin conditions where it still exists.

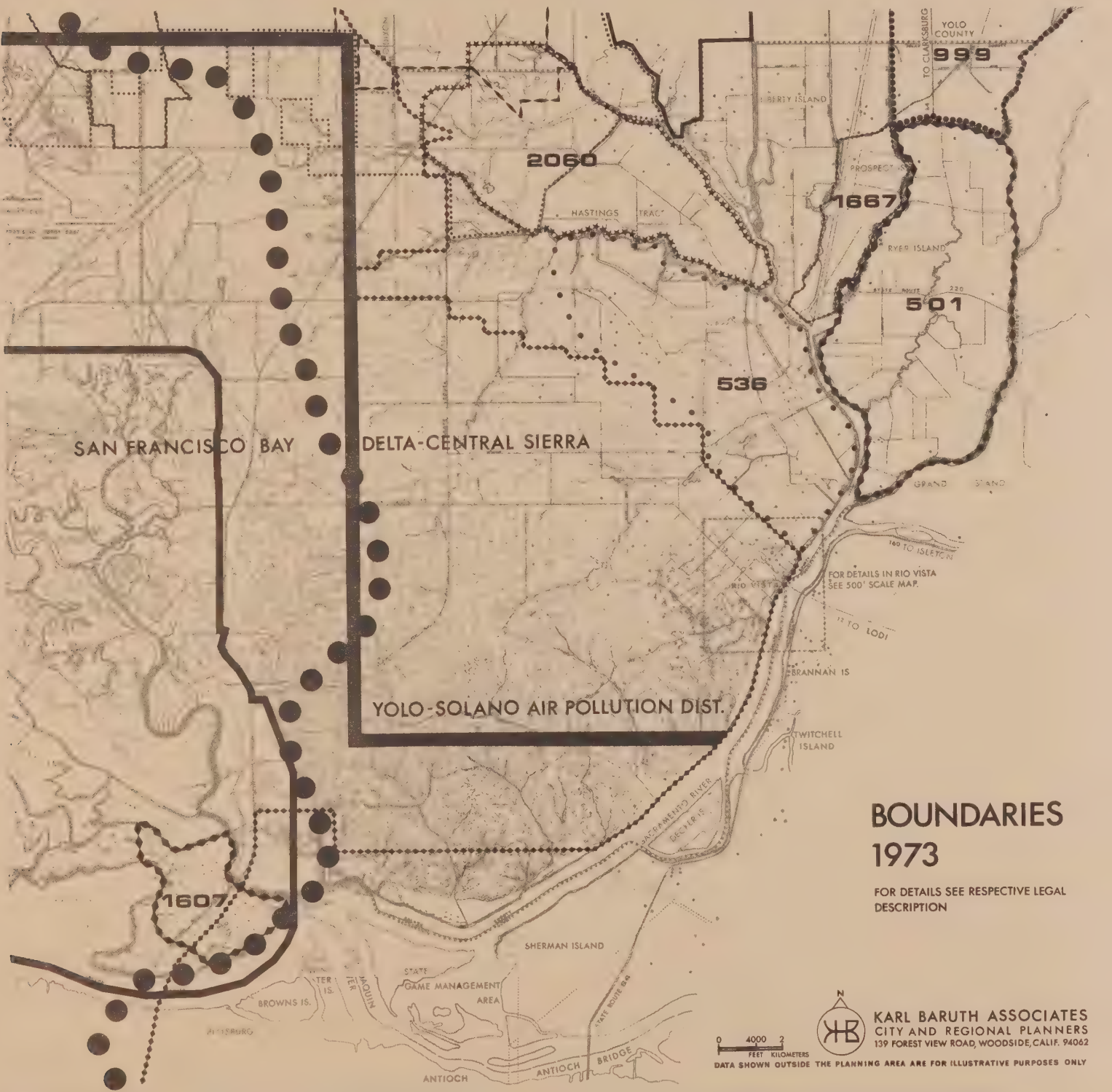
Policies are: Waste water from Industrial productions in the Collinsville area and the Atomic Fower Plant should enter the river pre-cleaned and at the right time, at the right height and at the right temperature.

Encroachment of the Suisun Marsh boundaries as outlined by the Bay Area Conservation and Development Commission by incompatible uses should be avoided.

Mutually acceptable levee maintenance requirements should be agreed upon by the U. S. Corps, the Reclamation Board and the respective local maintenance district.

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BOUNDARIES 1973

FOR DETAILS SEE RESPECTIVE LEGAL DESCRIPTION

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- BAY AREA AIR POLLUTION CONTROL DISTRICT
- HYDROLOGICAL SUB-REGIONS
- LEGAL SACRAMENTO-SAN JOAQUIN DELTA BOUNDARY
- NUMBER OF RECLAMATION DISTRICT: **507**
- SUISUN RESOURCES CONSERVATION DISTRICT
- ULATIS " " "
- DIXON " " "
- SOLANO IRRIGATION DISTRICT
- MAINE PRAIRIE IRRIGATION DISTRICT

As levees are being rehabilitated under the Sacramento River Bank Projection Project, annual or perennial grasses and other low-growing ground cover plants are known to be completely compatible with levees for flood control on either the land-side or water-side and should be used. Brush and small trees prefer the water-ward slope.

D. PREVENTION AND CONTROL OF THE POLLUTION OF STREAMS AND OTHER WATERS

1. Sewage and Industrial Wastes

Discussion The San Francisco Bay Regional Water Quality Control Board was created by the State Legislature for the purpose of controlling the quality of water, preventing and controlling water pollution and encouraging good planning for the disposal of domestic sewage and industrial wastes in the Bay Area. The area of the Board's jurisdiction is basically that of the natural drainage area of San Francisco Bay covering almost all of the territory within the 9 Bay Area counties.

The Regional Board has direct jurisdiction over any private or governmental agency affecting water quality either directly through discharge into the Bay system or indirectly through other activities (such as logging operations which increase siltation or solid waste disposal practices which may pollute the Bay through surface water runoff or seepage).

Some operations in the Planning Area near the City are in need of sewage or industrial wastes facilities. The City of Rio Vista is planning and operating their own facilities.

2. Debris

Discussion Increasing complaints are being heard in the area concerning trash at some areas of the Sacramento riverbank or concerning floating debris. With expected greater recreational water use these problems are certain to increase. The trash and debris are not only unsightly and a threat to public health and safety but also in many instances cause undue hardships to private landowners.

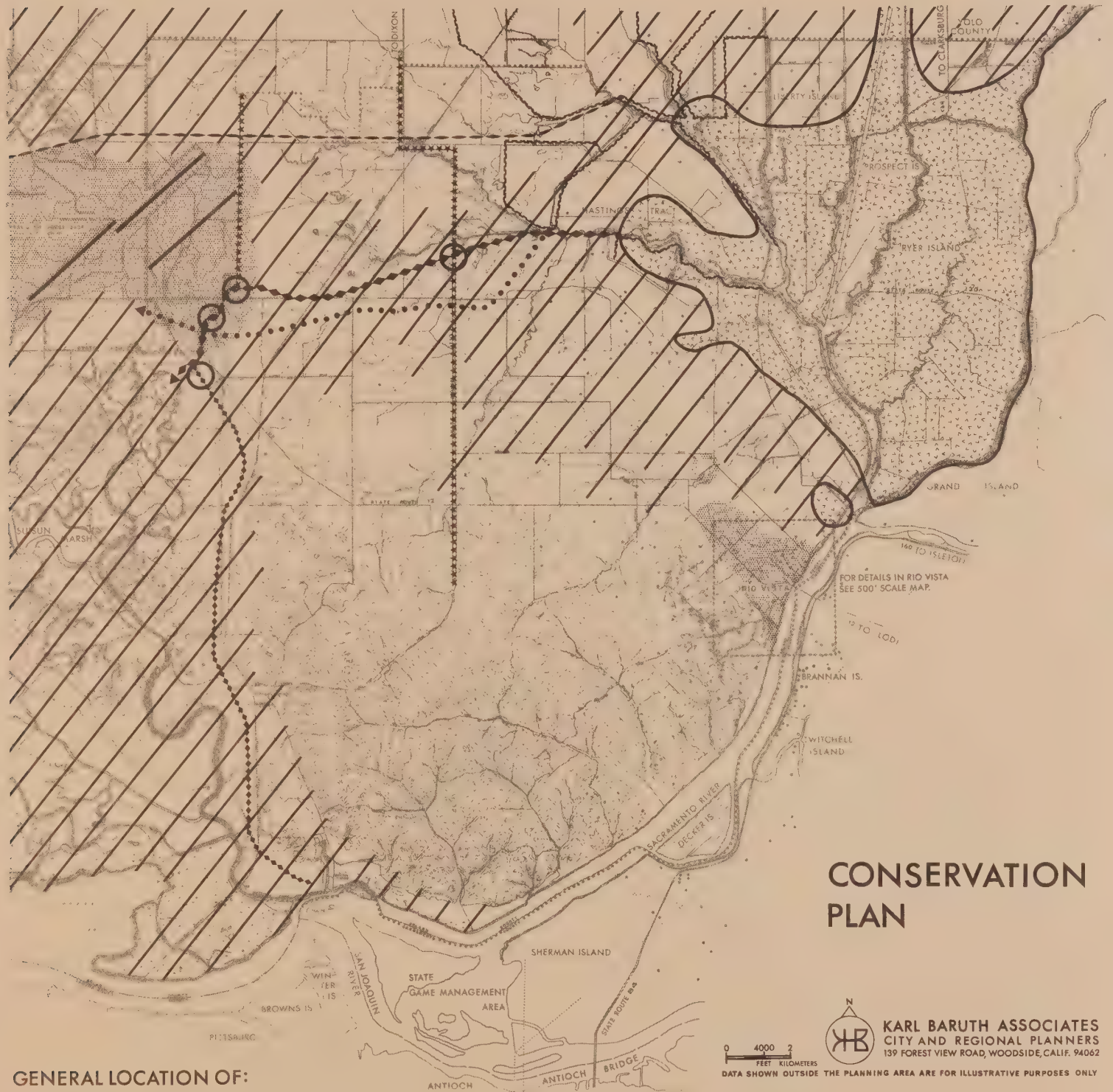
3. Protection of Water Quality

Discussion Many legal questions related to the Sacramento - San Joaquin Delta Water Supply are covered by the "Delta Water Rights Decision", apart from fresh water inflow from the Sacramento - San Joaquin Rivers assisting in flushing the Bay system.

The Delta Decision is important to the Bay for these reasons:

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a. The State Board has recognized the need for continuing review to protect water quality in the Delta (and thus, to some extent, the Bay) in accordance with the increasing emphasis on environmental protection in the State's water legislation; and:

b. The State Board has established interim water quality standards that must be met at specific places in the Delta. Those standards are directed to water quality in the Delta and do not ensure nor guarantee the substantial volumes of normal and flushing flows of fresh water into the Bay necessary to protect and enhance fish and wildlife habitats and recreational and commercial uses of the Bay.

c. The State Board has not yet attempted to determine the quality and quantity of fresh water inflows, including flushing flows, necessary to protect and enhance the Bay.

Goal is: To maintain the proper standards of water quality for domestic and recreational purposes in the Planning Area.

Policies are: Diversions of fresh water should not reduce the quantity and quality of the fresh water inflows into the Bay to the point of damaging the oxygen content of the Bay, the flushing of the Bay, or the ability of the Bay to support existing waterfowl and fish habitat of the Bay. The State Water Resources Control Board and other governmental agencies should monitor the water quality of the Bay to insure that no such damage occurs.

High priority should be given to the preservation of Suisun Marsh through insuring the maintenance of fresh water inflows into Suisun Bay adequate to protect the Marsh.

H. EFFECTUATION: REGULATION OF THE USE OF LAND IN STREAM CHANNELS AND OTHER AREAS REQUIRED FOR THE ACCOMPLISHMENT OF THE CONSERVATION PLAN

Discussion: Sloughs in flood control channels can be designed as a landscaped open space and be made a scenic asset to the residents of the Planning Area. Adjacent land-use should be protected from hazardous development. The County has no "Flood Plain Zone", since the hazardous county lands are zoned "Exclusive Agriculture".

Goals are: To avoid channeling and paving of slough valley which formerly absorbed the rainfall for the purpose of water conservation.

To design valleys of waterways as open space and scenic areas and avoid encroachment of development.

Policies are: Flood control agencies should be required to take aesthetic - scenic and environmental - ecological benefits into full consideration when computing costs of alternative methods of flood control.

PART I. CHAPTER 9. OPEN SPACE ELEMENT

SECTION I. OPEN SPACE FOR THE PRESERVATION OF NATURAL RESOURCES

A. PRESERVATION OF PLANT AND ANIMAL LIFE

1. Waterfowl

Discussion Varying seasonally and between years, from 10 to 50 percent of the ducks wintering in the State of California inhabit the Suisun Marsh segment of the San Francisco Bay Area. At this time a joint state and federal study by five agencies is underway to prepare the Master Plan for the Suisun Marsh. The Plan is expected to be finalized by Fall 1975. Goals and policies expressed for the preservation of the Suisun Marsh in the County's Open Space Plan now under preparation shall also be valid for the 2500 acres of the Marsh land within the Planning Area.

B. AREAS REQUIRED FOR ECOLOGICAL AND SCIENTIFIC STUDY PURPOSES

Lands in this category deserve preservation as open space, because of unique or unusual natural features that would be difficult to duplicate.

1. Ecological Interest

Discussion: Apart from the unique Marsh lands a small area, where the native clump grass (bunch grass) still grows, has been identified at the Lambie Road and Highway 12 junction.

Goal is: To preserve the area with last remaining growth of "Native Bunch Grass" located between Highway 12 and Lambie Road as a site of unique ecological interest.

Policy is: The native bunch grass should be preserved by negotiating an easement from the landowner to avoid grazing.

C. RIVERS, STREAMS, BAYS AND ESTUARIES

The Planning Area is rich in water-related natural resources.

1. Sacramento River

The Sacramento River, from its source to Clarksburg has been declared Class I Premium Scenic Fishery, Wildlife and Recreation Waterway. The river is also classified as Class 1 Waterway and Priority A Scientific Resource. Furthermore the river is a Premium Waterway for Salmon and Steelhead; declared as Striped Bass, Grayfish, Sturgeon, Shad Waters, and as a warm water stream; and as riparian lands.

Goal is: To protect the Sacramento waterway as an outstanding natural resource possessing extraordinary scenic, fishery, wildlife and outdoor recreational values.

Policy is: Adoption of guidelines to assure development along the Sacramento River and adjacent lands which is compatible with the goal.

2. Estuaries

Discussion The Sacramento - San Joaquin Delta is the outstanding example of an estuary in the Great Valley landscape province of the state.

Goal is: To protect the outstanding natural resource from incompatible land use.

Policy is: Guidance of future land and water use and development by adopting criteria discouraging incompatible use. (The multi-county "Delta Advisory Planning Council" is in process of preparing a comprehensive Delta study).

D. BEACHES, BANKS OF SACRAMENTO RIVER, WATERSHED LANDS

1. Beaches

Discussion: The so-called "Government Beach" south of Rio Vista extends from the City's Sewage Plant at a length of about 1 1/2 miles to the south along the Sacramento River. Only a short part of the land is on river level, the rest is about 40-50 feet higher owing to disposal of spoil from the Sacramento River dredging by the U. S. Corps of Engineers. The land is owned by the United States.

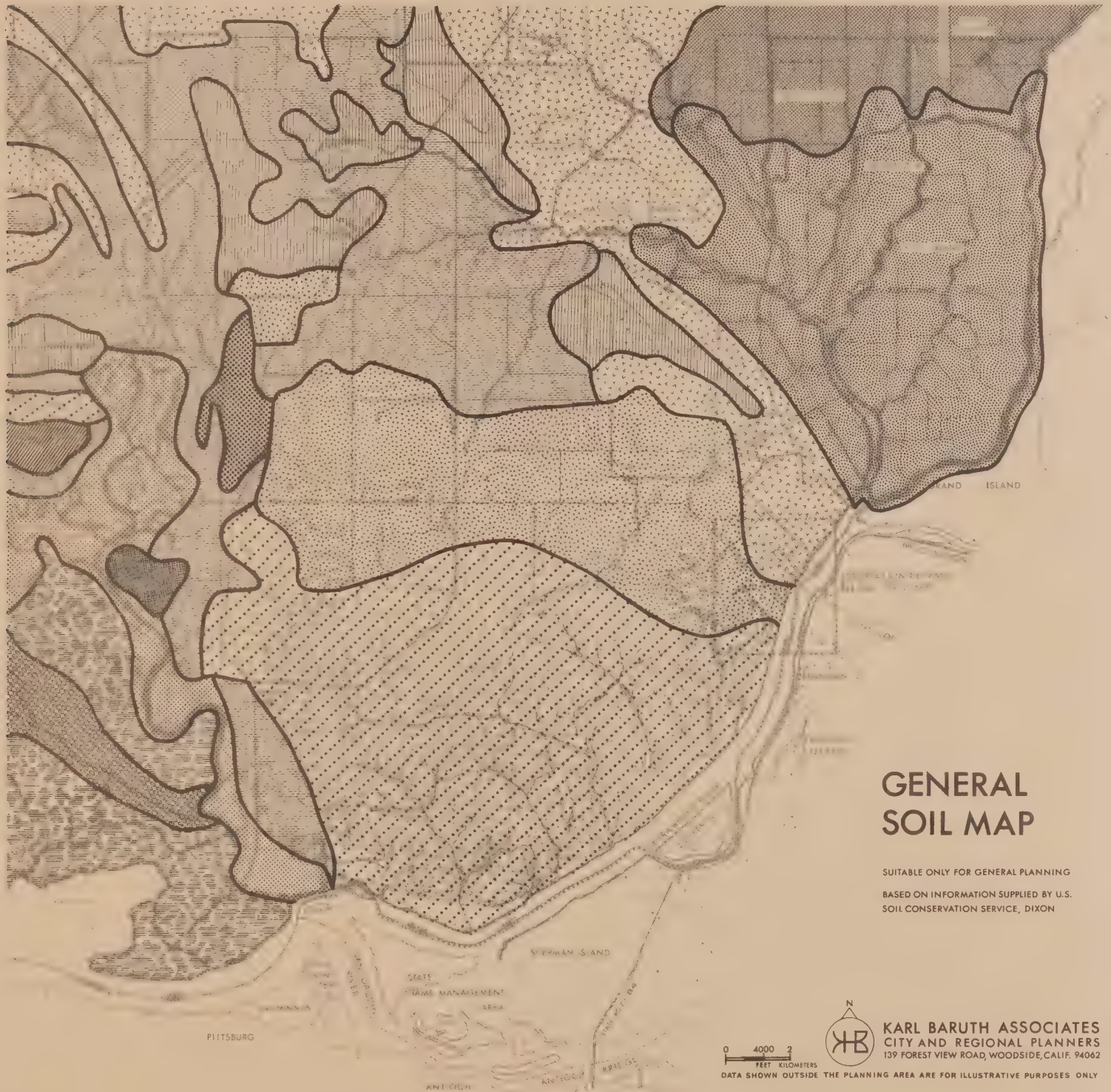
The deposit of the spoil on the "Government Beach" is done by agreement with the Yolo - Sacramento Port District and the U. S. Corps of Engineers. The spoil deposit is reaching slowly the height of the adjacent private lands and might - if deposit continues without removing the spoil - obstruct the view from adjacent lands.

"Government Beach" is the only public beach in the area - but not "officially" accessible for the ever growing number of recreationists living in or visiting the area. The "Beach" is of regional and local concern.

Goal is: To discourage further deposit of spoil from the dredging of the Sacramento Water Channel along "Government Beach" and to encourage use of the public land for public enjoyment.

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- ALTAMONT-DIABLO ASSOCIATION, 2-9% SLOPES
- " " " " 9-30% "
- CAPAY-CLEAR LAKE (DRAINED) ASSOCIATION
- CORNING ASSOCIATION, 2-15% SLOPES, ERODED
- DIBBLE-LOS OSOS ASSOCIATION, 30-50%, ERODED
- EGBERT ASSOCIATION
- PESCADERO-SOLANO ASSOCIATION
- REYES-TAMBO ASSOCIATION
- SACRAMENTO ASSOCIATION
- SAN YSIDRO-ANTIOCH ASSOCIATION
- SUISUN-JOICE ASSOCIATION
- VALDEZ ASSOCIATION
- MILLSHOLM ASSOCIATION, 30-50% SLOPES, ERODED

Policy is: Immediate joint action by Solano County and the City of Rio Vista to assure that all necessary steps are taken towards the realization of the goal, including provision of an alternate site to deposit the dredged material.

2. Sacramento River Banks

Discussion Sacramento River banks or levees are needed to protect extensive areas in the Sacramento River flood plain from potential wide spread damages and loss of life due to flooding.

3. Watershed Lands

Discussion Land, especially in the hills of the Planning Area is important for water production. The Montezuma Hills area drains northwards into the Lindsey and Cache Sloughs, the western and southern runoff waters reach the Sacramento River. To the West the watershed areas of the Montezuma Hills drain to Montezuma Slough.

Goal is: To protect natural watercourses and preserve adjacent fish and wildlife habitat.

Policy is: Leave natural watercourses in their natural state - as far as possible - and preserve fish and wildlife habitat along the watercourses. Encourage the beneficial water-preservation and recreation project by the Bureau of Reclamation.

SECTION II. OPENSOURCE USED FOR THE MANAGED PRODUCTION OF RESOURCES

Lands for managed resource production are those lands that are capable of producing a natural product at cost that is "economically viable". The term means not but highest possible return on investment but simply a break-even return on land and labor, assuming a system of land value taxation based on current use rather than on the value the land would have based upon developed, urban areas.

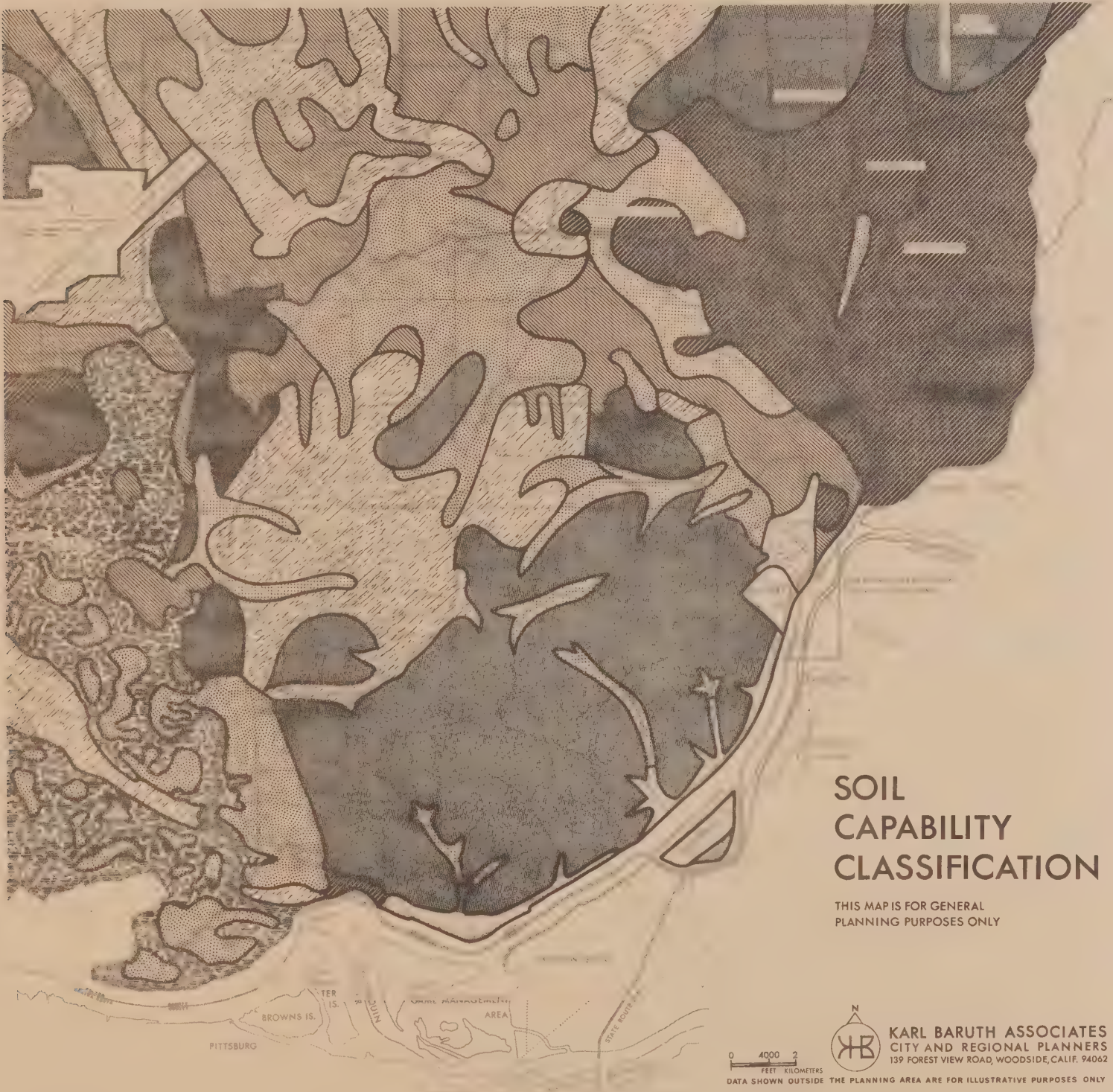
A. FOREST LANDS, RANGELAND, AGRICULTURAL LANDS AND AREAS OF ECONOMIC IMPORTANCE FOR THE PRODUCTION OF FOOD AND FIBRE.

There are no forest lands in the Planning Area, but mainly rangeland and also agricultural lands.

1. Agricultural lands

Discussion The about 25 thousand acres of premium agricultural lands are located in the northeast corner of the Planning Area and are rated "excellent" or "80-95" according to R. Earl Storie Rating.

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SOIL
CAPABILITY
CLASSIFICATION

THIS MAP IS FOR GENERAL
PLANNING PURPOSES ONLY

R. EARL STORIE RATING :

- EXCELLENT 80-95
- GOOD 72-77
- FAIR 50-54
- POOR 16-34
- VERY POOR 1-10

MARSH



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Goal is: To preserve areas of first class agricultural lands for intensive agricultural use only.

Policy is: The agricultural use to be protected by retaining the existing exclusive agricultural zoning, and the encouragement of the use of agricultural preserve concept for prime quality agricultural lands.

2. Rangeland

Discussion The rangelands are located in the Montezuma Hills. The area has topography which ranges from gentle slopes elevation of 10 feet to rolling hills with a maximum elevation of 386 feet. The soil is suited for general row cropping and the land is used primarily for livestock grazing - apart from crops like alfalfa.

Goal is: To preserve the agricultural use because it is beneficial for man both economically and as a visual open space.

Policy is: The land zoned for agriculture at the present time remain as such retaining the rights and privileges that are now in effect.

B. AREAS REQUIRED FOR RECHARGE OF GROUND WATER BASINS

Discussion Groundwater can be obtained in many parts of the Planning Area with the exception of the Montezuma Hills area. Production varies and reaches about 600 gallons per minute from a well behind City Hall, Rio Vista. Groundwater flow is eastward towards Lindsey Slough. The water levels between 1950 and 1966 show an insignificant change.

Basically all lands in the Planning Area - with the exception of the Montezuma Hills - are groundwater recharge areas.

Goal is: To regulate land uses on permeable surfaces that contribute to groundwater recharge in such a way as to encourage normal percolation of rain water to continue.

Policy is: Encourage "open" land uses like agriculture, recreation, low density housing with sewers rather than septic tanks; industrial development only for production methods without disposal of toxic wastes. With expected urbanization to occur towards the north-west of Rio Vista, the major slough between the Municipal Airport and Rolling Green Drive should remain as open space even to the south-east of Highway 12 in order to provide "ground - water recharge".

D. AREAS CONTAINING MAJOR MINERAL DEPOSITS

1. Gas

Discussion Although there is some minor production of sand, the major mineral deposit is natural gas. Partly or fully within the Southeastern Solano County Planning Area eight producing gas fields are located. The major gas producing field is the Rio Vista Gas, located partly in Sacramento County. About 73 percent of gas reserves in the eight gas fields are in Rio Vista gas field, the largest producer of dry gas in California. If the present rate of withdrawal continues and if no further gas wells of the potential additional 72 wells are drilled and if no further gas discoveries are made, it seems that the now known gas reserve will be used up by around 1980.

Goal is: To manage natural gas extraction operations also in the future in such a way that they do not interfere with the agricultural and grazing land use in which they are located.

Policy is: Natural gas extraction operations should be maintained and expanded. Visual blight (if any) and safety hazards should be considered before granting permits. Land is to be restored to its natural state after the well has been abandoned.

SECTION III. OPEN SPACE FOR OUTDOOR RECREATION

A. AREAS OF OUTSTANDING SCENIC, HISTORIC AND CULTURAL VALUES

Discussion The area of greatest value is the Sacramento River, a part of the Sacramento - San Joaquin Delta

Goal is: To preserve the scenic quality of the Sacramento River as a most valuable element of the natural landscape and as an important scenic resource.

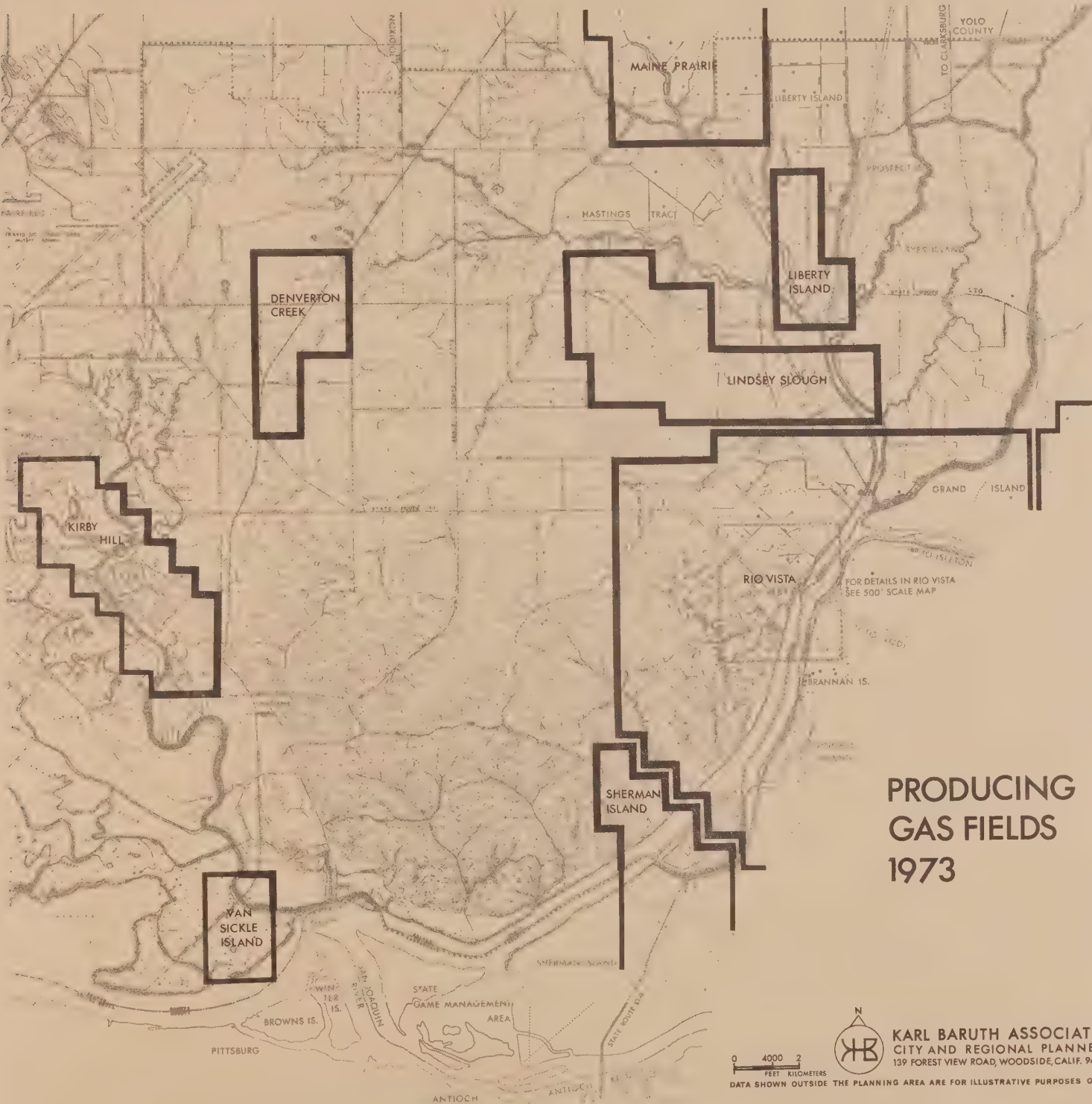
Policy is: Preservation of the Sacramento River landscape should be achieved by compatible land use in order to provide scenic enjoyment.

B. AREAS PARTICULARLY SUITED FOR PARK AND RECREATION PURPOSES, INCLUDING ACCESS TO LAKESHORES, BEACHES, AND RIVERS AND STREAMS

1. Areas for Park and Recreation

Areas particularly suited for park and recreation purposes for visitors and residents include the Sacramento River, especially the about 1 1/2 miles long so-called "Government Beach". Also sloughs and their water surfaces provide a variety of recreational possibilities like swimming, water-skiing, boat-picknicking, fishing, mooring, sunbathing, camping and other uses.

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PRODUCING
GAS FIELDS
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2. Special Purpose Recreation Area

a. Off-road recreational vehicles

Discussion A newly developing recreational activity is the use of off-road recreational vehicles (ORRV's).

Goal is: To discourage the use of and performance by off-road recreational vehicles - except at specified areas -, because even a few of them may be destroying the qualities for which open space lands are valued by so many.

Policy is: Encourage the provision of special areas and facilities suitable for the enjoyment of recreation vehicle users. Provide for the use of already publicly owned lands, which might be used without undue impairment to the environmental balance of such lands.

b. Recreation area at the proposed Montezuma Power Plant

Discussion There are many licensing and approval stages that a new power facility must go through before construction can begin. Since the Sacramento River has recreational value, P. G. & E. is required to prepare plans for public recreational uses of certain areas of the plant site.

Goal is: To encourage P. G. & E. to recognize its responsibility to the general public to assist in the protection of California's resources.

Policy is: Incorporation of a recreational multi-purpose use plan at the proposed Montezuma site, pursuant to the F. G. & E. agreement with the State

c. Recreation areas along Denverton Channel and east and north of Potrero Hills.

Discussion The beneficial North Bay Aqueduct Water Project by the U. S. Bureau of Reclamation and the State of California is planning - in combination with water supply channels and lakes - the development of two recreation areas with easy access by road. About 720 acres would be required to serve a projected optimum annual use of 750,000 visitor-days. Activities would include: Fishing, picknicking, swimming, camping, bird-watching, boating, riding & hiking trails, according to that plan.

Goal is: To encourage the beneficial water importation project to Suisun Marsh and the Montezuma Hills area which includes the multi-purpose recreational development.

Policy is: The recreational development will be part of the Planning Area's Open Space Plan.

C. AREAS WHICH SERVE AS LINKS BETWEEN MAJOR RECREATION AND OPEN-SPACE RESERVATIONS, INCLUDING UTILITY EASEMENTS, BANKS OF RIVERS AND STREAMS, TRAILS AND SCENIC HIGHWAYS

Discussion Water channels in their natural state together with scenic highways and trails can connect the entire open space system and provide opportunities to get from one park to another by slow driving, bicycling, horse-back riding or hiking.

Goals are: To establish bicycle route, hiking and riding trails and scenic roads in such a way that they can form a connecting system for recreational activities, including trails on the levees along Lindsey and Cache sloughs as part of the beneficial water supply project.

To recognize that the Sacramento River and the existing and future roads, if any, along or near the banks are scenic in character and are traversing beautiful rural areas.

Policies are: Easements for trails should be required from special purpose agencies (electricity, gas, water, etc) whenever they apply for acquisition of right-of-way for their facilities along public roads.

The realignment study of State Route 12 should incorporate both pedestrian and bicycle facilities in the right-of-way design for the new bridge.

Highway 84 from Rio Vista to the Ryer Island Ferry and on Ryer Island be designated and developed as a Route through Scenic areas and the criteria established by the State be studied. Deep-water channel access by industry is recommended.

SECTION IV. OPEN SPACE FOR PUBLIC HEALTH AND SAFETY

The purpose of this Section is to draw attention to those areas where development could cause a long-term deterioration of the general public welfare or could result in immediate threat to the public welfare through a direct hazard to life and property.

The major categories of direct hazard to life and property are:

- A. Geological hazard areas;
- B. Flood plains hazard areas;
- C. Areas required for the protection of water quality and water resources;
- D. Areas required for the protection and enhancement of air quality;
- E. Airport hazardous zones.

A. GEOLOGICAL HAZARD AREAS

Geological information is contained in Chapter 10 of this Report.

B. FLOOD PLAINS HAZARD AREAS

Discussion The Yolo Bypass area is subject to controlled inundation, the only lands subject to flooding in the Planning Area, The Haas, Cache and Maine Prairie Sloughs are outside of the Planning Area. They have been subject to flooding during the last flooding, which occurred in 1964.

About 1 mile north of the Highway 12 Bridge some flooding occurred in 1964 and the water drained - over the pavement of Route 84 - to the Sacramento River. At times the river even floods portions of the river banks at Rio Vista without having caused damage to some streets or backyards. None of the areas subject to flooding have permanent structures for human habitation or commerce, but are used for agricultural purposes.

Goal is: To preserve the agricultural use under controlled inundation because it is beneficial for man both economically and as a visual open space.

Policies are: The agricultural use of flood plain areas should be protected and greater effort should be made to make it economically feasible.

Establishing of an overlapping flood zone at some future date when development near the Rio Vista area may bring about a change from agricultural use to other more intensified uses.

C. AREAS REQUIRED FOR THE PROTECTION OF WATER QUALITY AND WATER RESOURCES

Discussion Water Pollution Standards for the Planning Area are set and administered by the California Regional Water Quality Control Board - Central Valley Region. This is done in cooperation with standards set by the U.S. Environmental Protection Agency.

Vessel waste discharge poses a problem for water quality. With the increasing popularity of boating the problem of waste discharge from boats and shore installations is becoming an increasing significant nuisance, pollution and hazards to the health of recreationists and riverfront residents. Recreation boaters should also be subject to police regulations.

Goal is: To prohibit the discharge of pollutants of all types from houseboats or any other vessel to the surface waters of the Sacramento River.

Policy is: The California Regional Water Quality Control Board in coordination with federal and state laws should set strict standards of water quality. Strict adherence to the standards should be encouraged.

D. AREAS REQUIRED FOR THE PROTECTION AND ENHANCEMENT OF AIR QUALITY

Discussion Air Pollution standards are set and administered by the "Bay Area Air Pollution Control District" and by the Yolo - Solano Air Pollution Control District with office in Woodland. The two-County District has its own set of air pollution standards which are controlled by the State through the Resources Agency and the U. S. Environmental Protection Agency. The Planning Area is geographically part of the "Sacramento Valley Air Basin".

Prevailing wind patterns from the west and southwest clean the existing low levels of air pollution - which may have reached the Southeastern Solano County Planning Area from the Contra Costa County waterfront industries. Other polluters include the Travis Air Force Base take-off or landing movements and the car exhausts concentrating along the Highway 80 corridor. Air pollution is harmful to human health and causes damage to property and plant life, including agricultural crops.

Air quality depends on the degree, type and location of industry and the location and density of urbanization supporting the industry. Urbanization generally adds to the pollutant load in the atmosphere, removes vegetation and produces climatic conditions more favorable to the formation of smog.

Goal is: To divide areas of industrialization by a wide distance from areas of urbanization in the Planning Area.

Policy is: Concentration of industry is depending on deep water access in the Collinsville area and north of the proposed harbor along the existing and planned road and rail facilities. Separation of urban areas from the sources of industrial pollutants by physical barriers like Montezuma Hills, Potrero Hills or Kirby Hill is beneficial for the residents. The physical barriers should remain in agricultural use, also in the future.

F. AIRPORT HAZARDOUS ZONES

Discussion These zones comprise the airport flight obstruction areas and the lands within intensive noise levels of planes landing or taking-off from Travis Air Force Base and the planned civilian Meridian Airport.

Goal is: To control airport noise in relation to human environment.

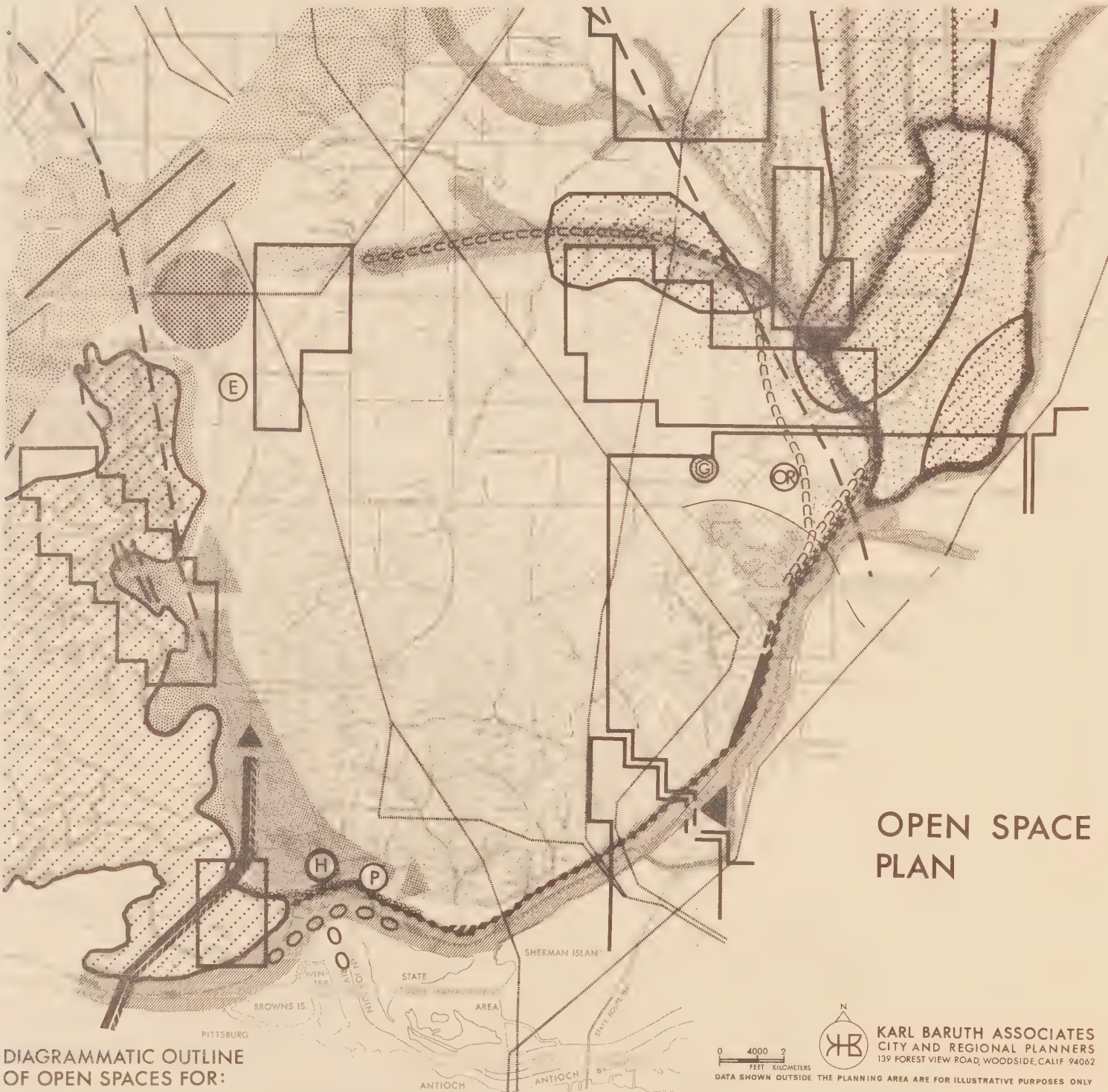
Policy is: Establish compatible land use and development control for various types of development, satisfactory to the users in relation to different noise ranges.

SECTION V. EFFECTUATION

Proposals for the Southeastern Solano County open space action program are part of a county-wide effort, now under way by another consultant. Effectuation on County lands is according to the recommendations of the countywide plan, in addition to the policies expressed in this element.

SOUTHEASTERN SOLANO COUNTY PLANNING AREA * CALIFORNIA

CITY OF RIO VISTA AND SOLANO COUNTY PLANNING COMMISSIONS



OPEN SPACE PLAN

DIAGRAMMATIC OUTLINE OF OPEN SPACES FOR:

PRESERVATION OF NATURAL RESOURCES

- PLANT AND ANIMAL LIFE
- AREA OF ECOLOGIC INTEREST
- SACRAMENTO RIVER BANKS
- SUISUN MARSH TRANSITION AREA

MANAGED PRODUCTION OF RESOURCES

- EXCELLENT AGRICULTURAL SOIL
- GAS FIELDS
- ELECTRICITY TRANSMISSION LINES
- SAND
- ANADROMOUS FISH RUN JUNCTION: BAY-DELTA RIVERS

OUTDOOR RECREATION

- SCENIC ROUTES
- RIDING, HIKING AND BICYCLING TRAILS
- GOLF
- OFF-ROAD RECREATION VEHICLES AREA
- RECREATION AREAS OF WATER SUPPLY PLAN
- WATERWAYS USE
- POWER PLANT RECREATION AREA
- "GOVERNMENT BEACH"

PUBLIC HEALTH AND SAFETY

- EARTHQUAKE FAULT (UNDER REVIEW)
- AIRPORT HAZARDOUS ZONES (OBSTACLES AND NOISE)
- SCREENING OF INDUSTRY

- DEEP-WATER HARBOR (BCDC)
- RIO VISTA GROWTH AREA (URBAN)
- INDUSTRIAL DEVELOPMENT (BCDC)
- TRANSPORTATION (MTC PRELIM. PLAN)
- MERIDIAN AIRPORT TRADE AREA



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PART I. CHAPTER 10. SEISMIC SAFETY ELEMENT

A. POLICY STATEMENT

Discussion In the Southeastern Solano County Planning Area no public or private losses occurred because of earthquakes, landslides, flooding or other geologic locally related events, although these hazards have reached a high level in certain other parts of California, including the Bay Area. Seismic risk is composed of three factors:

1. The naturally occurring seismic event;
2. The response of a particular man-made structure to that event;
3. Human exposure to the combination of the first two factors.

Item 1. The subject is discussed in Section D below.

Item 2. This component need not consider one- and two-family dwellings nor farm buildings.

Item 3. This component is based on the time average of the number of persons exposed to the hazard. Occupancy or utilization of certain structures may vary widely according to time of day (day school - evening school), day of week (Sunday: Church, teenage center, etc.).

Goal is: To reduce the risk of death, injury and property damage due to a major earthquake.

Policies are: If by December 31, 1973, the State Geologist will delineate "earthquake hazard zones" in Southeastern Solano County Planning Area for review and comment, earthquake-resistant design should be required for all structures designed for human occupancy. (In addition to the "Uniform Building Code" regulations).

Programs for buildings with major structural deficiencies - if they exist - prone to collapse in an earthquake should be effectively pursued and regulations be adopted which should minimize the hazards.

Existing buildings of high-occupancy load, such as schools and places of public assembly, should be vacated as soon as possible, if they can be proven to be seismic hazards,

Note: Your consultant did not intentionally or carelessly omit evidence and cannot be held liable for any damage due to seismic movements. This seismic element is for general planning purposes only. A lot by lot analysis may show different results based on specific data in earthquake or slide prone areas.

cannot be rehabilitated, and are therefore deemed a public nuisance.

Solano County will add amendments in their zoning, grading and subdivision ordinances and building code to provide for the further reduction of earthquake hazards.

A plan for earthquake disaster relief will be formulated and periodically reviewed for maximum effectiveness.

The above goals and policies should be adopted by the County Planning Commission and County Board of Supervisors.

B. CONTINGENCY PLAN

Communities should have contingency plans which specifically include earthquakes. This subject is part of the "Safety Element" in Chapter 13 of this Report.

C. CONSIDERATION OF EXISTING STRUCTURAL HAZARDS

The objective of this component is to provide for the orderly abatement of structural hazards within the community.

No critical and high occupancy buildings and structures exist in the Planning Area. Exceptions are Highway 12 bridge over the railroad at the Railroad Museum and those structures affecting the safety of large numbers of people like dams and levees.

D. IDENTIFICATION, DELINEATION AND EVALUATION OF NATURAL SEISMIC HAZARDS

The level of seismic hazard is dependent upon both geological conditions and the extent and type of land use. This section concerns itself with a definition of geological conditions contributing to seismic risk in the Planning Area.

SB 520 provides for the control of hazardous building along active earthquake faults. The State Geologist is to delineate special study zones encompassing all potentially and recently active traces of the San Andreas, Calaveras, Hayward, and San Jacinto Faults and any other fault which constitutes an earthquake threat. The State Mining and Geology Board is to develop policies and criteria for reviewing real estate developments or structures within the zone. Under the terms of the act, local jurisdictions are responsible for enforcement of state standards with the state performing an appellate function.

1. Earthquake Intensities

Earthquake intensities are measured by intensity scales. The latest compila-

tion of earthquake intensities in different areas of California in July 1974 shows the western part of the Planning Area with a symbol C and the eastern part with a symbol B. Both symbols cover parts of the four North Bay Counties. The eastern part of the Planning Area is covered by symbol B. The symbols mean that the area covered experienced intensities of VI or more on the "Modified Mercally" intensity scale between 1810 and May 1969, symbol B: 6 - 10 times; symbol C: 11-15 times.

According to the seismic risk map of California only minor earthquake damage can be expected in the Planning Area. At the same time another map was issued by the State, placing the central parts of the Planning Area into IX to X probable maximum intensity and the fringes of the Planning Area between VII and VIII intensity.

The Governor's Earthquake Council made it clear that the available mapping of geologic hazards is inadequate especially for rapidly urbanizing areas. The GEC demands that the State should accelerate preparation of comprehensive maps of earthquake geologic hazards for land-use decisions on all levels of government.

Earthquake damage and casualties can be caused - amongst others - by ruptures from faulting, ground shaking, ground failures, or ground displacement. The available data have been collected by your consultant and are illustrated on the accompanying map for the Planning Area. The subject is discussed in the following sections.

2. Fault Displacement

In response to the accumulation of stress in the rocks, earth materials have moved relative to one another. Most of the faults in the San Francisco Bay area are extinct or long dormant, though sometimes "active".

Within the Southeastern Solano County Planning Area are now three recorded fault zones. To the City's south is the recently described Rio Vista fault, north of the City passes the Midland Fault zone and along the western boundary of the Planning Area criss-crosses an unnamed fault zone the earth.

a. Midland Fault Zone

The "Sacramento Sheet" of the State Division of Mines and Geology (second printing 1971) shows on the map the "Midland Fault Zone". Throughout the whole length, the fault is illustrated dotted, which indicates that the fault is concealed (hidden). Several sources are given in the "Index to the Geological Mapping", but no further information on the activity or the depth of the fault could be found in the index. In the State's geology plan the fault zone is illustrated and described in the legend (after active and after quaternary classification) as "Other faults, some of which may be active". On the USGS/HUD map of 1973 this fault has been omitted.

Although the fault zone within the Planning Area is used and zoned for exclusive agriculture, levees might be effected - if the fault would be active. Damage depends -

amongst others - on the intensity of shock and on the depth the fault is actually located under the surface. These investigations should be made first to find out how - if at all - the levees could be affected.

b. Various faults at the eastern border of the Planning Area

One unnamed north-south oriented fault is approximately located south of Kirby Hill bordering Potrero Hills, then traversing Travis Air Force Base and turning north-westward. In the State's Plan this fault is described in the legend as a fault without historic record and/or without recognized Quaternary movement (the State's map is unclearly drawn).

The geological history of the area is now under consideration by "Earth Science Associates", Palo Alto in connection with the investigations this firm of engineering geologists is undertaking now for the Pacific Gas & Electric Company's Plan site, east of Collinsville. This investigation will hopefully answer the questions of "activity" of the fault and also the possible - if at all - extension of the fault south towards the Power Plant site.

Further short north-south faults are approximately located at Potrero Hills and Kirby Hill according to the "Sacramento Sheet" of the State Division of Mines & Geology.

3. Earthquake Epicenters

The latest compilation (July 1972) of earthquake epicenters in California does not show any evidence in the Southeastern Solano County Planning Area. A 1963 report which is based on U. S. C. & G. S. listings of epicenters between 1928 - 1958 shows no epicenters in the Rio Vista area nor in the remaining Planning Area.

4. Ground Shaking

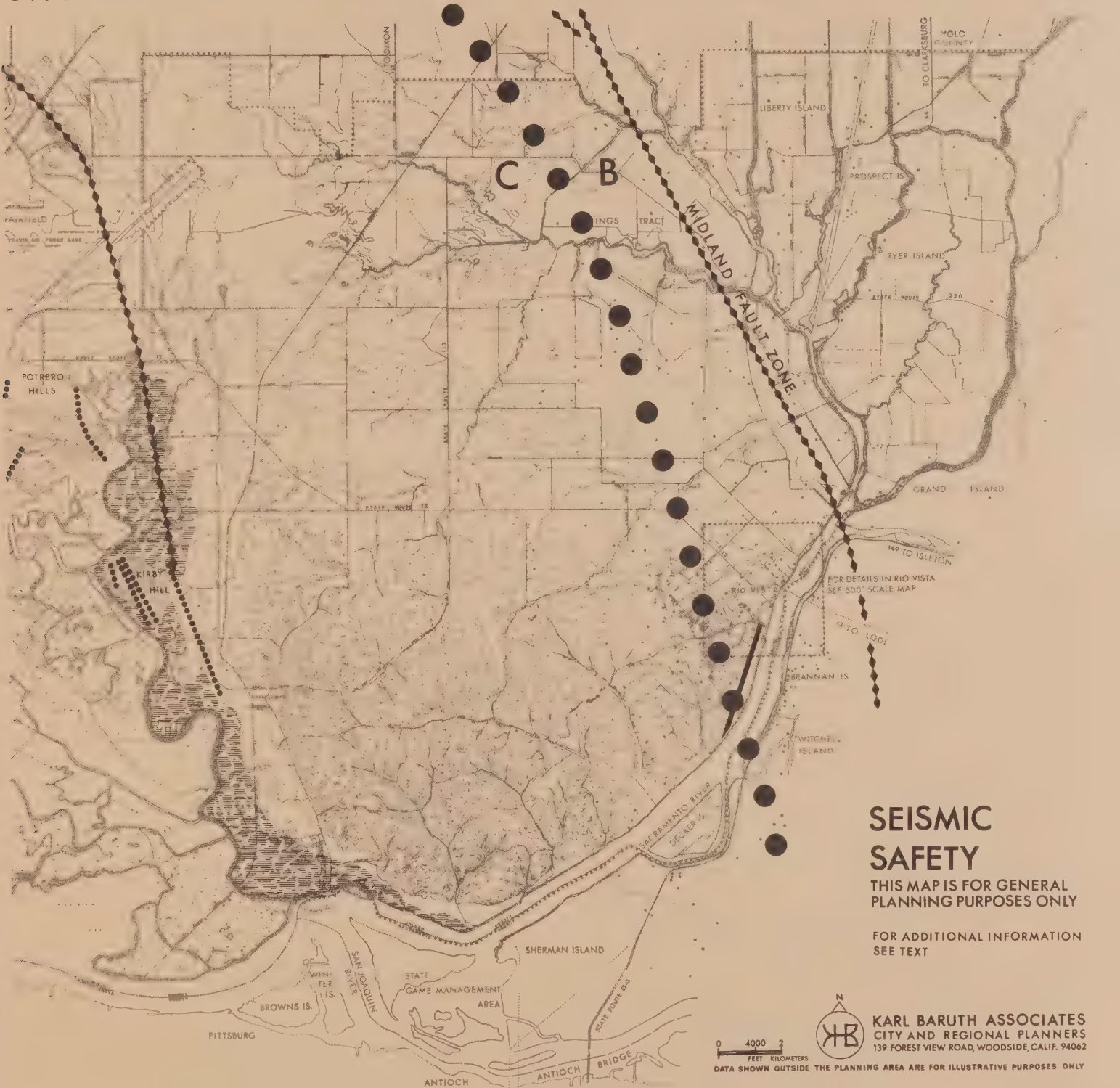
Probably the most difficult task today, in terms of the predictive capability of the geologist and seismologist, is devising a reasonably reliable method of predicting "ground shaking". Although broad generalizations may answer some questions, a wide variety of factors (apart from soils) may contribute significantly to damage potential, like magnitude, distance, frequency and duration of a particular spot or point in the Southeastern Solano County Planning Area.

As of today (July 1973) we cannot predict when, where, or how great the next earthquake will be, although the "state-of-the-art" is advancing rapidly.

It would appear that - at this time - a very broad generalized approach of correlating types of damage with firmness of rock and soil may be adequate to evaluate ground shaking for a first attempt to prepare a seismic element to a general plan. This system, however, suffers from the inherent difficulty of not being able to relate age and quality of structure with ground conditions in different areas.

SOUTHEASTERN SOLANO COUNTY PLANNING AREA * CALIFORNIA

CITY OF RIO VISTA AND SOLANO COUNTY PLANNING COMMISSIONS



SEISMIC SAFETY
 THIS MAP IS FOR GENERAL PLANNING PURPOSES ONLY
 FOR ADDITIONAL INFORMATION SEE TEXT

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GENERAL LOCATION OF:

- RECENTLY MAPPED SURFACE FAULT (U.S.G.S. 1972)
- CONCEALED FAULT
- APPROXIMATE LOCATION OF FAULT
- STATE DIVISION OF MINES AND GEOLOGY, 1966 (SECOND PRINTING, 1971)
- 6-10 } NUMBER OF TIMES LOCALITY HAS EXPERIENCED
- 11-15 } INTENSITIES VI-VIII FROM 1810-1969 (STATE DIVISION OF MINES AND GEOLOGY, JULY 1972)
- HISTORIC MARGINS OF MARSHLAND IN THE MID-1800'S WITHIN PLANNING AREA (U.S.G.S.)

5. Ground Failure

This component deals with the stability of slopes under seismic conditions to determine the potential for seismically - triggered landslides.

Ground failure occurs when stresses in the ground exceed resistance of earth materials to deformation or rupture. Instability comes about when stresses are increased by natural or man-made causes, such as earthquakes, artificial fills, groundwater or gas withdrawal, peat oxidation subsidence or others.

Liquefaction occurs when there is a dramatic reduction in resistance in saturated, loose granular materials (silt, sand, or gravel) such as may occur during an earthquake. The earthquake - induced deformation transforms a stable granular material into a fluid in which the solid particles are virtually in suspension similar to a quick-sand condition.

The Montezuma Hills area has no significant groundwater and liquefaction seems remote on these agriculturally used hilly range lands.

a. Soils

The general dominant soil association on which Rio Vista stands is Altamont-Diablo, 2-9% slopes and the Montezuma Hills Altamont-Diablo, 9-30% slopes. This information is for general planning purposes only and is based on a soil depth of five feet or less than five feet where bedrock is encountered at a lesser depth, all for non-farm interpretation. Detailed soil surveys must be made for operational planning. A very detailed soil survey is now being undertaken by the U. S. Soil Conservation Service, Dixon.

The clay soils of the Altamont-Diablo association developed from softly consolidated sediments, under a grass cover. They occur on gently rolling topography having slopes to 30 percent. The soils are moderately deep, well drained and slowly permeable. These clays develop wide cracks as they become dry. The erosion hazard is slightly - moderate.

The General dominant soils between Collinsville area and north towards Travis Air Force Base along the Suisun Marsh consists of San Ysidro - Antioch and Reyes - Tambo associations.

The claypan soils of the San Ysidro - Antioch association developed from loamy alluvium from sedimentary rock sources. The erosion hazard is slight. The soils of the Reyes - Tamba association developed from alluvial material from mixed sources. The soils are very deep and poorly drained. There is no erosion hazard.

(1) Erosion

Erosion is the process in which soil or soil-like material is removed

from one area and transported to other areas largely by means of moving water. If water moves over a level area, little physical damage usually occurs to structures due to removal of material. However, if the flow of water is concentrated, the velocity increases and deep gullies may result which could in time encroach upon, and damage structures. One of the results of all the types of erosion activity can cause damage and expenses by undermining structures, depositing silt, sand, or mud in low areas such as roads, basements, tunnels, and water front areas.

Soil erodibility is termed only "moderate" in the Montezuma Hills area and "low" in the remaining Planning Area, according to the State's "Erosion Activity" map. Engineering geology investigations should be part of each development application within areas deemed to be or being potentially hazardous.

(2) Expansive Soil

A soil is called expansive if it has the property of swelling when it absorbs moisture; when the soil dries again, in daily or seasonal cycle, it shrinks. The degree of volume change depends both on the quantity of moisture change and on the amount and kind of clay in the soil. In the present state map of 'Expansive Soil' the Planning Area is generally designated as "high" rating.

Since expansive soils are easily detected and structural engineering solutions are relatively easily usable, they are not considered a "risk" problem.

(3) Landslides

Landslides are a common problem in the hill - slope areas of California. On the State's map showing relative amounts of landslides in California, the Planning Area has the lowest amount.

Landslides are extremely local in character and local slope stability conditions should be investigated by the applicant for a building permit to prevent ground movements, or to minimize its adverse effects.

No record of damage to County roads in the Southeastern Solano County Planning Area due to earthquakes or slides can be found, nor are any landslides in the Planning Area shown on a recent detailed map, mentioned above. The U.S. Bureau of Reclamation's 430 kw transmission line near Toland Landing has moved due to landsliding and elaborate landslide stabilization measures were installed.

b. Subsidence

(1) Peat Oxidation Subsidence

Subsidence due to peat oxidation is a problem in California only in the farming area of the Delta. Each year, as the fields are cultivated, peat is exposed to the atmosphere and gradually oxidizes.

The lands in the northeast corner of the planning area are peat-covered and subsidence owing to peat oxidation can be a potential hazard, according to the State's Master Plan. The lands are now used and zoned agricultural, which is also recommended for the future.

(2) Gas Withdrawal Subsidence

A relatively small amount of subsidence has been documented in the area of Rio Vista Gas field in the eastern portion of the Planning Area. It is not known whether this subsidence is the result of gas withdrawal, groundwater withdrawal, peat compaction, or natural geologic processes. If this subsidence is wholly or in part the result of gas withdrawal, its relatively small magnitude and rate should not present a problem during the remaining productive life of the field.

(3) Ground Water Withdrawal

Subsidence is caused primarily by substantially lowering of the water table. No subsidence owing to the ground water situation in the Planning Area is recorded in the State's plan.

6. Tsunamis and Seiches, Volcanic Eruption

None of these hazards are mentioned to have occurred in the Planning Area in the State's geology master plan.

Since 1945 certain functions are assigned to the State's Reclamation Board relative to construction activities on flood control works outside the boundaries of the Sacramento and San Joaquin Drainage District.

Many of the levees forming the different islands and the Yolo Bypass are traversed by the Midland Fault Zone. Break in the levees would inundate the area just northeast to the City of Rio Vista, where flood control levees have been built for protection. At that area State Route 84 is assumed to be constructed low enough to allow the flood water - if any - to drain into the river. The area is now used and zoned agriculturally and no change is recommended.

E. SEISMIC DETERMINANTS OF LAND USE POLICY - EFFECTUATION

This component is concerned with reducing seismic risk to future development and as such will be highly significant to the total community, particularly in the long run.

Since the now available data are insufficient to determine the geological engineering characteristics of the land forms, the margin for accuracy is probably wide. However the general guidelines expressed in this section may serve as a framework for planning tools to administer planning and development regulations.

Guidelines are important to be followed because the Planning Area - although not having been the locus of a major earthquake - is and has been affected by major outside earthquakes (1889, 1892, 1906, 1916). In addition the State's "Urban Geology" Master Plan includes the Planning Area for probable shaking maximum intensity of between VII and VIII rating.

Furthermore the State Geologist will present "special study zones" by December 31, 1973 for review and comment to the affected Cities and Counties, according to the new Geologic Hazard Zones Act. At that time more accurate and detailed information will be available.

In view of the variations in geologic and soil conditions - and many unknowns - which represent varying degrees of risk, it is neither feasible nor is it the purpose of this General Plan program to prescribe specific investigations, designs or procedures which would be appropriate.

With the above severe limitations in mind, the following general recommendations are presented.

1. Existing Regulation (July 1973)

- a. BCDC

The San Francisco Bay Conservation and Development Commission (BCDC) has jurisdictions over Bay lands, including the Collinsville area. The adopted 1969 Bay Plan includes consideration of "Geology" (p. 133) and "Fill" (p. 147). BCDC has an Engineering Criteria Review Board which reviews the engineering aspects of applications for BCDC permits.

- b. ABAG

The Association of Bay Area Governments (ABAG) already in 1968 published a report on Regional Geology. ABAG's "Regional Plan 1990" of 1970 recognizes the importance of earthquakes in relation to building constructions and classifies the Suisun Marsh area as "Soils of questionable bearing capacity".

- c. Solano County

- (1) County General Plan

The 1967 County General Plan does not provide for special seismic hazard areas in relation to land use, zoning or subdivision regulations, because no major earthquakes originated recently in Solano County nor was a seismic element required at that time.

(2) Building and Grading Codes

The County's building and grading permits are now issued by the building inspector according to the applicable sections and conditions of the Uniform Building Code. The County is in earthquake zone III (greatest hazard) according to the UBC and for all non-residential buildings soil tests are required. Since no geologist - engineer is on the staff, the soil engineers' reports are accepted unquestioned. The County's Public Works Department does not participate in the issuing of permits at this time.

All grading control is now done according to the UBC, since no special grading ordinance exists.

The 1970 edition "Dangerous Building Code", volume IV of the Uniform Building Code published by the International Council of Building Officials has not been officially adopted by the County.

2. Recommendations

The purpose of the recommendations is to reduce seismic risks in the future. This should be achieved without additional administrative or bureaucratic complications with the use of existing laws.

Since the State is rating a probable shaking maximum intensity of between VII and VIII in the Planning Area precautions should be taken to help protect the citizens' lives and properties.

What can be done to limit the damage of an earthquake? The County should undertake a program (in cooperation with the State Geologist) to assist in the identification of the three fault zones within the Planning Area (Rio Vista, Midland and the ones along the eastern boundary).

a. Seismic hazard control

Earthquake damage can be controlled by restricting land use and by improved building design.

(1) Restricting land use

Land use should be controlled in high seismic hazard areas or "risk areas" such as a fault corridor, areas of possible landsliding and areas where soil conditions amplify and prolong ground motion. The need for fault corridor would have to be established first by the State Geologist under the new Geologic Hazard Zones Act; areas of possible landsliding may exist, but more detailed studies would be needed for identification; some soils along the Planning Area's eastern border consist of poorly consolidated and moist sedimentary material which may require special constructional considerations, that is a structural engineering issue.

The proposed land use for the Planning Area consists of agricultural and other open uses only, with three very minor exceptions. The non-open uses are the planned industrial use in the greater Collinsville area and north; motels - restaurants - services commercial at Meridian Airport; and a limited Rio Vista urban growth area.

No land use restrictions are recommended now in the General Plan in relation to seismic hazards, although more detailed planning in the future and additional information may make changes necessary.

(2) Buildings

In relation to new construction, the County should consider adoption of an ordinance similar to the 1970 edition of the "Dangerous Building Code", published by the International Council of Building Officials as volume IV of the Uniform Building Code, modified to specifically treat earthquake risks. Industrial buildings are expected in the greater Collinsville area, commercial buildings near the Meridian Airport and limited urban development in the Rio Vista growth area.

Chapter 70 of the Uniform Building Code shall apply:

When soils engineering reports are required by the following:

- (a) The depth (or height) of cut or fill is 3 feet or greater.
- (b) The fill is to support structural footings.
- (c) An engineered cut or fill is required.
- (d) The soils are or may be subject to shrink-swell and settlement.

When engineering geology reports are required by the following:

- (a) Finish cut or fill slope faces with vertical heights in excess of 10 feet.
- (b) Existing slopes are steeper than 10 horizontal to 1 vertical.
- (c) An existing cut slope having a vertical height in excess of 10 feet.
- (d) Existing stream bank cliffs in excess of 10 feet.
- (e) Existing or suspected earthquake or seismic hazards.
- (f) Existing or suspected groundwater hazard.

Review and approval of design by the professional soils engineer and engineering geologist (when required by code) assigned to the project.

Supervision of construction by the professional soils engineer, engineering geologist, and design civil engineer.

Certification of site preparation at the completion of project by the soils engineer, engineering geologist, and design civil engineer.

Staff capabilities (licensed with the disciplines of engineering geology, civil engineering (soils) and civil engineering (design) or contracted professional capabilities covering the fields of soil engineering, engineering geology, and design civil engineering. If by contract the consultants should review all permit requests rather than at the choice of an administrator.

b. Levees

Safety of a large number of people is affected by failures of levees. The local levee maintaining districts have the responsibility for maintaining the Sacramento River Flood Control Project levees to the standards established by the Corps of Engineers and enforced by the State Reclamation Board. A new approach may also be found through an areawide Delta Levee Maintenance District. Failures of levees with resulting flooding is a "risk", as has been proven during the recent Isleton disaster. Whether the levees failed owing to earthquake or other reasons is of no relevance.

c. Zoning Regulations

Only after the State Geologist will decide by December 31, 1973, according to SB 520 that there is a "special study zone" within the Planning Area and only after the review by the local authority concurs, such a designation of certain lands may lead to "Fault Hazard Zoning".

If such an area could be found in the Planning Area the key recommendation would be to "control or restrict construction". Permits should be issued only after geological reports justify construction.

Alternatively, in such areas of extremely high risk the community should consider prohibition of all uses other than those essential to the public welfare (utility and transportation facilities). Certain types of land use are completely compatible with the high level of risk attendant to major active fault zone. Some of these include agriculture, open spaces, recreation areas, cemeteries, freeways (but not interchanges), parking lots, and solid waste disposal sites (under some conditions).

d. Subsidivion Regulations

With the new public awareness of seismic hazards, soils and geological reports should be required to be submitted with the construction plans for any subdivision in the Planning Area - if so required by the County.

e. Grading Regulations

Strict regulations in relation to excavations and fills shall apply to all new operations. Building permits to be connected with a grading permit if excavations on a building site exceed 300 cubic yards or involve a cut or a fill in excess of four feet. Slopes for cuts and fills for building construction be no steeper than 2:1.

No quarries are in operation at this time nor are they expected to operate.

f. Continued review and revision of the Seismic Element

Since more information will be forthcoming through the State's Geologist's Office and also owing to investigations of Earth Science Associates, Palo Alto, for P. G. & E's Collinsville plant and since continuously additional information on theories of earthquake prediction and techniques in construction are devised, it is essential that the County and the City periodically review and update the information in relation to the earthquake risk situation. This should be done every three years, or earlier, if significant information becomes available. The first review will be related to the State's Geologist's survey to be submitted to affected Counties by December 31, 1973.

PART I. CHAPTER 11. NOISE ELEMENT

A. THE NOISE NUISANCE

1. Noise is unwanted sound. In the rural-agricultural Southeastern Solano County Planning Area no noise nuisance is now in existence.

2. Noise Levels

Non-desirability of sound is what noise is all about. The noises around us and the "acceptability" is shown in Table 11-1.

TABLE 11-1 NOISE AROUND US, 1973

Sound Level dBA	Industrial or Machine Operator	Community-Outdoors	Home-Indoors
(Painful)			
140			
130			
(Uncomfortable			
Loud)	Oxygen Torch		
120	(121 dB)	Jet Take Off at 1000'	Rock-n Roll
110	Riveting Machine (110dB)	(110 dB)	Band (108-114 dB)
(Very Loud)	Electric Furnace (100dB)	Jet Flyover at 1000'	
100	Farm Tractor (98dB)	(103 dB)	
	Newspaper Press (97dB)	Rock Drill at 50' (95dB)	
90	Power Mower (96 dB)	Motorcycle " " (90dB)	
(Moderately		Compressor " " (90dB)	Food Blender
Loud)	Milling Machine	Power Mower " " (85dB)	(88 dB)
80	(85 dB)	Diesel Truck " " (85dB)	Garbage Disposal
		Diesel Train " " (85dB)	(80 dB)
		Passenger Car	Clothes Washer
		at 50' (75dB)	(78dB)
70		Air Conditioning	Dish Washer (75dB)
60		Unit at 50' (60dB)	Vacuum Cleaner (70dB)
		Large Transformer	Conservation (60 dB)
(Quiet)		at 50' (60 dB)	
50			

Source: "Noise Pollution", U. S. Environmental Protection Agency, Wash. D. C. 1972, p. 6. The data in the above Table seem to indicate that about 60 dB(A) indoors are still "acceptable" by some, according to subjective judgements by people.

Harmful effects of noise on people are illustrated in Table 11-2.

One approach is to base noise criteria on what most people would tolerate to have in the way of a noise environment and will "accept" without undue complaint as suggested in Table 11-3.

TABLE 11-2 HARMFUL EFFECTS OF NOISE

Harmful Effects	Noise Levels at which harmful effects occur
Hearing loss	75-85 dB (A)
Extra auditory physiological effects	65-75 dB (A)
Speech interference	50-60 dB (A)
Interruption of sleep	35-45 dB (A)

Source: "Noise Pollution" Senate Hearings, 92nd Congress, Washington D. C. , 1972.

TABLE 11-3 "ACCEPTABLE" NOISE LEVELS

Location	Assumption of what people would tolerate		Assumption of what people would accept without undue complaint	
	Noise Level dB(A) Day - 10 pm. Night		Noise Level dB(A) Day - 10 p. m. Night	
Rural Residential	35	25	35-45	25-35
Suburban Residential	40	30	40-50	30-40
Urban Residential	45	35	45-55	35-45
Commercial	55	45	55-65	45-55
Industrial	60	50	60-70	50-60

Source: "Noise Pollution", U. S. Senate Hearings, Wash. D. C. 1972, pp. 314, 315.

The above qualitative or subjective reactions by people to noise are just personal statements. People have lived with increasing noise for so long that many have lost any rational basis for judging what they might want if they had an appropriate base for judgement. Because of the variation in the way people react to noise, it is not possible to determine fixed noise limits "acceptable" to all people under all circumstances. The survey interprets the results of interviews held with people in areas with a specific loud noise, about 1/3 said that they tended to get used to the noise and about 1/4 said the noise became more bothersome with time.

B. CALIFORNIA'S RESPONSE TO NOISE

The Governor's Office recognizes that noise has many adverse effects on man. Part of the reason for the frustration of today's urban life can be placed in the high noise levels that act as subliminal irritants. It causes hearing loss, interrupts sleep, interferes with speech, hampers classroom activities and generally degrades the quality of life. Noise in general is a local problem and should be controlled at that level.

GOAL - It is the Goal of the State to reduce irritating and harmful effects of noise to the citizens of the State to insure acceptable environmental noise standards through effective planning and, if necessary, regulation.

To accomplish this Goal the following Policies are recommended:

POLICIES - It is the Policy of the State:

1. to provide within State Government a focal point for noise abatement and prevention, including:

- a. collecting and disseminating competent information on adverse effects of noise and of means for its control;
- b. developing, in cooperation with all units of government, model noise ordinances for urban, suburban and rural environments;
- c. providing assistance to Local Governments engaged in developing and implementing noise abatement procedures;
- d. developing criteria and guidelines for use in setting standards for human exposure to noise;
- e. developing noise emission standards for noise producing objects in use in California; and
- f. developing noise transmission standards for new buildings constructed in California and recommending building code provisions requiring compliance with these standards.

C. HIGHWAY NOISE

California's particular noise problem on roads stems from the about 12, 5 million motor vehicles which use California highways. This vast vehicular armada includes about 700, 000 motorcycles and about 70, 000 diesel trucks. The State's Public Works Department believes that three concerted attacks are involved to reduce the freeway traffic noise:

- Reduction of noise at the source - the motor vehicle;
- Adequate land-use zoning adjacent to highways by local government; and
- Proper highway design and location.

Nationwide highway noise levels compatible with different land uses are worked out by a "Noise Standards Advisory Committee" with a representative also from the State of California. A recent draft for review is published as "PPM 90-2" and deals with the highway noise levels and is illustrated in Table 11-4.

TABLE 11-4 "LOW NOISE LEVEL" HIGHWAYS

Highway sections meeting all of the following criteria and having no special noise-producing characteristics would not normally exceed the design noise levels of Categories B, C, and D of the standards established by the Federal Noise Standards (Memo. 90-2).

Number of lanes	Design Speed not more than	Operating Speed not more than	Traffic Volume not exceeding Automobile-vph. Trucks-vph.		Distance from pavement edge to noise sensitive activities not less than
2	70 mph	70 mph	1500	30	100 feet
2	70 mph	70 mph	600	50	100 feet
4	50 mph	45 mph	6000	30	100 feet
4	50 mph	45 mph	1500	50	100 feet

Source: "PPM -90-2" U. S. Department of Transportation, Federal Highway Administration, Washington D. C. 1972, Attachment 1.

SOUTHEASTERN SOLANO COUNTY PLANNING AREA * CALIFORNIA

CITY OF RIO VISTA AND SOLANO COUNTY PLANNING COMMISSIONS



NOISE

THIS MAP IS FOR GENERAL PLANNING PURPOSES ONLY. NOISE CONTOURS TO BE VERIFIED FOR OPERATIONAL PLANNING

- APPROXIMATE LOCATION OF 'NOISE EXPOSURE FORECAST' (NEF) CONTOUR AROUND AIRPORTS
SOURCE: BOLT, BERANEK & NEWMAN, 1971 FOR TRAVIS A.F.B. AND HUD FOR RIO VISTA
- APPROXIMATE 'NORMALLY ACCEPTABLE' DISTANCE FROM STATE ROUTE 12, 1971 - - - - - ROUTE 12 BYPASS, 1990 ESTIMATE
SOURCE: 'NOISE ASSESSMENT GUIDELINES' HUD, 1971
- — — — — APPROXIMATE LOCATION OF CNR 90 AROUND TRAVIS A.F.B.
SOURCE: TRAVIS A.F.B., ENGINEERING OFFICE, 1972
- • • APPROXIMATE LOCATION OF ESTIMATED NEF 30 CONTOUR AROUND MERIDIAN AIRPORT, 1985



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More detailed noise prediction methods are prescribed by the U. S. Department of Transportation in their revised "Policy and Procedure Memorandum 90-2", January 29, 1973, and are shown in Chapter 21 of this Report.

The "California Highway Code" defines "acceptable" noise levels of vehicles at a drive by distance of 50 feet from centerline of travel lane, as shown in the following Table.

TABLE 11-5 CALIFORNIA HIGHWAY CODE VEHICLE NOISE LEVEL

dB(A)	Vehicle type
90	Trucks & Motorcycles - State law maximum
87	Acceleration-Muffled Diesel Trucks
86	Cars and Pickups - State law maximum
83	Acceleration "Quiet Truck"
80	*Muffled Diesel Trucks
79	"Quiet" Diesel Truck
70	California's 1968 Goal for all vehicles
65	Unmodified Sedan

* Unmuffled Diesel Trucks have been measured at 105 dB(A).

1. Highway Noise in the Southeastern Solano County Planning Area

Highway noise is produced by traffic along Highway 12 from Travis Air Force Base to Rio Vista. According to information by the Division of Highways they "have not undertaken any highway traffic noise measurements along the sparsely populated and undeveloped areas adjacent to Highway 12. No detrimental impact on ambient noise levels is anticipated by the planned highway improvement, and no extensive noise study is planned".

a. Noise Contours

The areas shown on the maps on both sides of Highway 12 traversing rural areas are estimated to be bordered by the 65 dB(A) contour, which is roughly similar to 30 NEF or 90 CNR or 65 CNEL noise values. The distance is about 100 feet from pavement edge to noise sensitive objects outside of the 1973 Rio Vista City limits.

b. Zoning and Land Use

Highway 12 traverses now very sparsely settled areas which are used and zoned for agricultural purposes outside of Rio Vista. A bypass of Highway 12 is planned to the north of Rio Vista through lands which are used and zoned for exclusive agriculture.

2. Noise Reducers

Highway noise can be reduced in sensitive locations by putting up noise barriers, as discussed in Chapter 21, Section C-4.

D. AIRPORT NOISE

One airport (Travis Air Force Base) is located adjacent to the Southeastern Solano County Planning Area and one commercial-carrier airport is planned within the Planning Area east of Travis: the Meridian Airport. One airport is located within the City limits of Rio Vista. The Solano County "Master Plan of Airports", adopted by the Board of Supervisors on December 3, 1968, suggests a new basic utility airport for a new community in the Montezuma Hills. That portion of the Master Plan has not been approved and adopted by the Board and a Montezuma Hills airport has been disregarded.

1. Meridian Airport

This civilian airport was first put on the map in 1965 for the Central Solano County Preliminary General Plan, 1985 p. V-50 and three years later confirmed in the County's Airport Plan. The Regional Airport Systems Study Committee (RASSC) and ABAG, after considerable study of many alternative sites in the San Francisco Bay Area, approved the Meridian Airport next to Travis AFB on November 30, 1972.

Although State law requires the Solano County Aviation Advisory Committee to formulate a comprehensive land use plan that will provide for the orderly growth of each public airport and the area surrounding the airport, some suggestions are presented.

2. Noise

Noise contours (90 CNR) of Travis Air Force Base flights are illustrated approximately on the map according to the Base Engineer's information and according to the ABAG/RASCC study. The NEF 30 contour around Meridian Airport is only an indication of where the contour might be located, based on the estimated extension of the ABAG/RASCC study. The noise impact boundaries are not to be mistaken with the limitations put by "Objects Affecting Navigable Space" regulations.

65 dB(A) contour is about similar to 30 NEF or 90 CNR or 65 CNEL noise values for general planning purposes. The airport noise criteria according to the State's Report of Aeronautics regulations (Section 5011) stress that "Preference shall be given to actions which reduce the impact of airport noise on existing communities. Land use conversion involving existing residential communities shall normally be considered the least desirable action for achieving compliance with these regulations". The State establishes (Section 5012) also noise levels. For new airports the noise contour is 65 DB, though for existing airports the level is 70 dB until 1985. This seems to be in order to avoid economic hardship in providing acoustical treatment for existing residential buildings.

The land uses around the future Meridian Airport are generally classified as commercial and industrial. The lands around the future airport are now agriculturally used and zoned. There is no incompatible land use at present. Since the airport will be planned from "scratch" all noise precautions should be taken and only compatible land uses permitted.

E. EFFECTUATION

The zoning ordinance and the building code are the appropriate instruments to control noise in coordination with a "specific plan" around Travis and Meridian Airports.

PART I. CHAPTER 12. SCENIC HIGHWAYS

A. SCENIC ROUTES

The designation "Scenic Route" implies a change in the official State of California's Scenic Highway System, since no such road in Solano County is included in the State's system. This would be a cumbersome administrative procedure over years and very expensive, too.

A county commitment by ordinance to the protection of the roadsides of officially designated highways is mandatory by the State for such a designation and permission to advertise the "Scenic Route" emblem. It is recommended that the County achieves the same results by drafting its own "Scenic Route Regulations" and designing its own "Scenic Route" emblem. The regulations must include a special sign or billboard ordinance, higher development standards, architectural design, minimum lot size and width and landscaping, as shown below in Section C.

B. SUGGESTED ROADS IN SCENIC AREAS

Solano County's area of the Sacramento - San Joaquin Delta is rich in number of roads and highway routes traversing the scenic and flat Delta. Relaxed and low speed travel on these roads is a valuable form of recreation for many and may produce a sensation of open space feeling.

One of the roads with a scenic setting is State Route 84. From the Rio Vista Highway 12 Bridge the road follows the Sacramento River for 3 1/2 miles with beautiful Delta scenery. Nearly all the lands between the State Route 84 and the River banks are not privately owned.

On the other side of the Sacramento River - in Sacramento County - State Route 160 is located. This route is within the "California Scenic Highway System" and eligible for official scenic highway designation. The Highway State Route 84 from Rio Vista via Ryer Island into Yolo County and the County route Ryer Road East are both proposed to be declared a "County Scenic Route" by the Solano County Board of Supervisors.

Both roads, the Highway 84 or the Ryer Road East, are on the levees. The most scenic quality consists of the near vistas. The Steamboat Slough or the Sacramento River extends at the levee on one side, and on the other side - several feet below the water level - are the farmers' fields with their houses and barns. Other scenic excellence comes from the abundant riparian vegetation along the Sacramento River, consisting of primarily oaks, cottonwoods, willows and other tree species in conjunction with numerous species of shrubs and grasses. The plants frequently grow in very dense stands, which form a virtual riparian jungle and provide habitat for a wide variety of wildlife species. The lands along the two roads are zoned A-20 "Exclusive Agriculture" and many farms are within the "Agricultural Preserve" (Land Conservation Act). There are no power transmission lines transversing the area nor outdoor advertising signs of any notable size or number.

SOUTHEASTERN SOLANO COUNTY PLANNING AREA * CALIFORNIA

CITY OF RIO VISTA AND SOLANO COUNTY PLANNING COMMISSIONS



- STATE ROUTE 84 THROUGH SCENIC AREAS**
- - - COUNTY 'RYER ROAD EAST' THROUGH SCENIC AREAS**
- SHORT VIEWS FROM THE ROAD**
- LONG VIEWS " "**

- (R.V.) ORIGINAL SITE OF RIO VISTA UNTIL 1862**
- > VISTA POINT**
- (R) ROADSIDE REST**

C. MINIMUM STANDARDS - EFFECTUATION

1. Policy Statement

Discussion The Joint Citizens' Committee on "Parks and Recreation, Open Space Lands, Rio Vista Recreation, Tourism and Marina" discussed the questions of "Scenic Highways". Furthermore the Citizens' Committee on "Transportation, Airports, Noise, Scenic Highways" spent also some time on the discussion of scenic highways.

The first mentioned Citizens' Committee agreed on the following:

Goal is: To recognize that the Sacramento River and the existing and future roads, if any, along or near the banks are scenic in character and are traversing beautiful rural areas.

Policy is: State Highway 84 from Rio Vista to the Ryer Island Ferry and on Ryer Island be designated and developed as a Road in scenic areas, as shown on the map.

The policy of the other Citizens' Committee is to:

Designate Highway 84 as a route in scenic areas shown on the map and study the criteria established by the State in relation to such roads.

2. Specific Development Plan of the route in Scenic Areas, as shown on the map.

The proposed roads in scenic areas traverse only "Exclusive Agriculture" lands in the County.

3. Sign or Billboard Ordinance

The State requires that off-premise advertising must be prohibited within the corridor, except in the case of an approved information panel. An adopted program for the eventual elimination of existing off-premise advertising will be acceptable (a maximum amortization of five years should be considered). For outdoor advertising that is thought to be necessary, it is suggested that information panels should be utilized and located in an unobtrusive manner within scenic area as shown on the map.

Many Sign ordinances for scenic areas have been studied and the suggested ordinance is based on existing Sacramento County law.

Scenic Area Sign Ordinance

Sec. 1.0 General Provision

No sign or other advertising display shall be placed or maintained within or adjacent to the Scenic areas for State Highway 84 or county Ryer East Road. Scenic area means the lands between established building lines.

Sec. 1.1 On-Site Signs - All Zones

The following "On-Site Signs as defined in this Division may be placed or maintained within a scenic area in any zone subject to the regulations of the zone such as size, location, number, height and illumination. This Section shall not be construed to authorize any sign not otherwise permitted by the zone regulations.

- a. "No Trespassing" and similar warning signs
- b. Home occupation sign
- c. Subdivision signs
- d. Real Estate signs
- e. Signs identifying architects, contractors or builders.

Sec. 1.2 On-Site Agricultural Signs

In the agricultural zone not more than two (2) on-site signs may be placed in the scenic area advertising the name of the owner or tenant or the agricultural products produced on the premises provided that no sign exceeds sixteen (16) square feet in area nor twenty (20) feet in height.

a. Sign area. The total area of all signs shall not exceed one and a half (1 1/2) square feet per foot of building frontage facing the local access public street or one (1) square foot per foot of local access public street frontage of the premises, whichever is greater.

b. Signs attached to buildings. Any sign attached to a building shall not exceed the height of the building nor shall the sign project above the roof line or parapet wall of the building.

c. Self-supporting sign. One (1) pole, post or self-supporting sign may be erected provided said sign shall not exceed twenty (20) feet in height, and shall be set back at least twenty (20) feet from all public street rights-of-way and all interior lot lines.

d. Signs within court yards and malls. The number of signs erected within court yards or mall spaces shall not be restricted provided the signs are located within a commercial complex in the buildable area of the lot and not visible from residential districts.

e. Sign orientation. Signs shall not be oriented to scenic areas, except that such a sign may be oriented to the point of primary vehicular access to the property upon which said on-site sign is located even though said sign be incidentally oriented to a route in a scenic area.

f. Sign Illumination. There shall be no flashing, moving or animated illumination. Lighting of signs shall not produce a glare on other properties in the vicinity and the source of light shall not be visible from adjacent property.

Sec. 1.4 Off-Site Signs

Off-site signs are not permitted in the scenic areas except within an approved directional sign group.

Sec. 1.5 Directional Sign Groups

a. The Solano County Planning Commission shall designate the locations for off-site directional sign groups required to inform the public of commercial, industrial, recreational, and other facilities provided such sign groups shall not interfere with official traffic signs or unduly detract from the natural scenic beauty.

b. Before any sign is placed in a directional sign group location, a use permit shall be secured from the County's Planning Commission which shall specify the size, placement, design, landscaping and parking requirements for the group. No sign shall exceed thirty (30) square feet of area, twenty (20) feet of height or devote more than twenty per cent (20%) of the sign area to brand name advertising.

Sec. 1.6 Signs on property adjacent to Scenic Areas

Signs shall not be placed or maintained on property adjacent to scenic areas if such signs are designed to be viewed primarily by persons traveling through such areas.

4. Land Use Regulation

Since the county routes in scenic areas are passing through "Exclusive Agriculture" zone, only minor regulations are suggested.

There are basically two methods to satisfy the requirements for land use regulations in a scenic area. One utilizes an "overlay" type of zoning, the other utilizes a "separate zone" concept. The overlay type may be more useful for areas where a great variety of districts are already established. Since in the scenic areas "exclusive agriculture" is the key zone, a separate zone concept is chosen and prepared with utilization of the respective Santa Clara County law.

Regulations for "S" Route through Scenic Area Zoning District

Sec. 1.0 Intent

The "S" Zoning District is created to protect recreation values, scenic features, and open character along certain parts of Highway 84 and the County's Ryer East Road by the exclusion of incompatible uses and structures as shown on the accompanying map: Roads through Scenic Areas.

Sec. 1.1 Architectural and Site Approval

The establishment of any use provided for in an "S" Zoning District shall be subject to the consideration of the Planning Commission and the issuance of an architectural and site approval. All uses established pursuant to the provisions of this section shall be developed with adequate arrangements for vehicle movement and off-street parking.

Sec. 1.2 Uses Permitted

The following uses are permitted in "S" Zoning Districts:

- a. One-family dwellings, or as established in the particular zone
- b. All agricultural uses except the conducting and maintenance of hog farms
- c. Golf courses and country clubs
- d. Public parks and playgrounds
- e. Hiking and riding trails
- f. Accessory buildings and accessory uses incidental to any permitted use.

Sec. 1.3 Uses Permitted on Securing a Use Permit

The following uses are permitted in "S" Zoning Districts subject to the securing of a use permit in each case.

- a. Public buildings
- b. Private parks and playgrounds
- c. Restaurants necessary for the convenience of scenic route users.

Sec. 1.4 Development Standards

a. Minimum building area: The minimum building site area shall be as established in the particular zone the route traverses. On the Ryer Island area the exclusive agriculture zone requires minimum 10 acre lots. Nearer to Rio Vista the minimum lot size requires 20 acres. Most of the now existing "T" (Temporarily Unclassified) zone is proposed to be rezoned as "High Density Residential".

b. Landscaping: Where necessary, landscaping may be required consistent with the purpose of this ordinance.

c. Required removal of non-conforming signs: Any outdoor advertising sign or outdoor advertising structure which exists as a non-conforming use in an "S" Zoning District after the adoption of this Ordinance, as amended, shall continue as provided for non-conforming uses, except that every such sign or structure shall be removed within a period of five (5) years from and after the time that such sign or structure becomes a non-conforming use.

d. High density residential development along Highway 84 to be an area of special design.

PART I. CHAPTER 13. SAFETY ELEMENT

A. FIRE HAZARDS

Southeastern Solano County Planning Area

Already seven years ago Solano County adopted the County's Anti-Conflagration Plan. Fire danger areas have been determined in that Plan to exist especially along the western part of the County, according to the Fire Danger Area map, 1966. All of the Southeastern Solano County Planning Area has not been determined to be a "fire hazard area", according to that plan. The boundaries have been determined by the State Division of Forestry.

The Montezuma Hills are very sparsely settled and are used exclusively for grazing and other dry farming agricultural activities. They represent a fire hazard to the farmers owing to high winds. This may reach such magnitude as to require the declaration of an emergency, especially if the fire would approach the City of Rio Vista. All firefighting resources in the County would then be necessary. An example is the 1961 wildfire which spread over great parts of the County. County-wide fire fighting of an emergency is part of the disaster functions of the "Fire & Rescue Annex" of the County's Emergency Operations Plan, prepared by the County Fire Warden.

B. GEOLOGIC HAZARDS

Seismic hazards in the Planning Area are described and mapped above in Chapter 10 of this Report.

C. BUILDING OCCUPANCY AND ESTIMATED POPULATION 1980, 1990

The number of injuries sustained as a result of a seismic calamity is highly dependent on the number of population in the area and on the time of day the shock occurs, e. g. during the night the population would be at home in bed; during afternoon hours most of the population would be away from home; between 8.30 A. M. and 2.30 P. M. most students would assemble in the Montezuma elementary school-building.

1. Resident Population

The 1970 figure was 1,001 persons. The estimated 1980 and 1990 figures are 1,750 and 2,500 persons respectively.

2. Division of Population

The 1,001 to 2,500 persons are dispersed over about 280 square miles in rural areas.

a. School Enrollment

Montezuma Elementary School serving the Planning Area may have an enrollment of 66 students by 1980 and 90 by 1990 for contingency planning purposes. The school has a daytime peak occupation, although the auditorium may be used during some evenings.

b. Hospital

Although no emergency medical facility exists in the Planning Area at this time, about 8,000 people by 1980 and about 13,000 residents and visitors by 1990, will be in dire need of local medical facilities in case of emergencies. The Southeastern Solano County Planning Area has long been identified as "health service scarcity area". Since the great majority of the population is and will be concentrated in Rio Vista, a first-aid medical facility should be constructed in the Rio Vista area.

The seriousness of the need is underlined by a recent federal publication which estimates the toll on human life by earthquakes for the San Francisco Bay Area.

The U. S. Office of Emergency Preparedness scenarios estimate the effects of a magnitude 8.3 quake, equivalent to that of 1906, striking along the San Andreas (figures for the Hayward are similar):

Scenario 1: Time - 2.30 a.m. Most people asleep in their homes. The area's nine dams hold. The toll: 3000 killed, 11,000 hospitalized.

Scenario 2: Time - 2.p.m. Many people at work; streets and sidewalks busy; dams hold. OEP sees 9,500 killed, 35,000 hospitalized.

Scenario 3: Time - 4.30 p.m. Roads and sidewalks are crowded with rush hour traffic, dams hold. More than 10,000 people killed, 40,000 hospitalized.

Add the element of failing dams and the casualties soar to 100,000 dead or injured.

c. Employment

Activities are on "outdoor" ranches and farms of the Planning Area. Collinsville's future industrial employment is as near to Fairfield's emergency facilities as to Rio Vista's.

D. EMERGENCY ORGANIZATION

The "Solano County Disaster Council" has been created by the Board of Supervisors to develop and recommend for adoption by the Board of Supervisors, emergency and mutual aid plans and agreements and such ordinances and resolutions and rules and regulations as are necessary to implement such plans and agreements.

The "Solano County Office of Civil Defense", Fairfield, is working on the emergency plans. The "State Office of Emergency Services" is developing "Community Emergency Operations Plans" under contract with the Office of Civil Defense, Department of Defense. The Southeastern Solano County Planning Area is included in those plans.

E. PRE-EARTHQUAKE PREPARATION AND EFFECTUATION

1. Vital Facility Structures

The County jurisdiction should prepare a list of the most vulnerable structures with relation to their effect on emergency operations and should check the structural conditions.

a. Buildings and structures critical for disaster recovery;
Fire stations, Police stations, Utility complexes (after construction), Meridian Airport complex (after construction).

b. Buildings with high occupancy;
School, "Behind levees (potential hazard), Employment centers (after construction).

2. Evacuation Routes

Major routes connecting Rio Vista with other areas include Highways 12 and 84. Highway 84 is partly located on the levees and may therefore be hazardous. Obviously this hazard is a possibility and not a probability.

Highway 12 connection to the County Emergency Center in Fairfield may represent a more serious problem. During earthquakes, man-made highway embankments and deep fills may settle in terms of inches as compared to the surface of the bridge deck. These - hopefully - are only aggravated nuisance problems which can be repaired, although these problems will slow down traffic or stop it until repairs have been completed.

The Highway 12 bridge over the Sacramento Northern Railways - if damaged - may possibly constitute a serious hazard and may delay vital transportation. The City and the County should jointly ask the State Division of Highways to check urgently the structural integrity not only of the bridge at the Railway Museum, but also the many other little bridges over sloughs and creeks. This step is strongly recommended.

Whether it be direct damage to the Railroad Bridge itself or failure of the approach fills and/or structures, for evacuation route planning purposes this bridge may be very vulnerable in major earthquakes.

3. Estimated Peak Load Water Supply Requirements








Southeastern Solano County Planning Area

Most of the Planning Area's future water requirements and supply demands have been studied recently by the U. S. Bureau of Reclamation. The results are shown in the following Table.

SOUTHEASTERN SOLANO COUNTY PLANNING AREA * CALIFORNIA
CITY OF RIO VISTA AND SOLANO COUNTY PLANNING COMMISSIONS



GENERAL LOCATION OF:

-  EVACUATION ROUTE 1973
-  FUTURE ROUTE
-  VULNERABLE BRIDGE OVER RAILROAD
-  AREAS SUBJECT TO CONTROLLED INUNDATION WITHIN LEVEES
-  AREAS SUBJECT TO UNCONTROLLED INUNDATION
-  LEVEES NEAR RIO VISTA
-  SOLID WASTE DISPOSAL SITE

SAFETY

THIS MAP IS FOR GENERAL PLANNING
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TABLE 13-1 ANTICIPATED WATER USE, MONTEZUMA HILLS UNIT
(Southeastern Solano County Planning Area)

Year	Municipal and Industrial (acre-feet)	Irrigation (acre-feet)	Fish and Wildlife (acre-feet)	Total (acre-feet)
1980	65,300	10,000	150,000	225,300
1990	83,400	98,900	150,000	332,300
1995	98,000	148,200	150,000	396,200
2000	112,500	148,200	150,000	410,700
2080	112,500	148,200	150,000	410,700

4. Levee Control

Regular maintenance of the levees northeast of the City of Rio Vista including the west levee of the Yolo Bypass will eliminate the overflowing in times of emergencies. The local levee maintenance district has the main responsibility for the levees' integrity. Maintenance of the levees is an ongoing responsibility of the particular districts.

5. Public Utilities

The most important public utility is water for fire fighting during emergencies and for human use, as discussed above in Section 3. c. Electricity is as vital, since the pumps to supply the water would not be able to work without energy source.

6. Communication

The continuity of emergency communication system is part of the County's "Communication Annex" to the Solano County Defense Emergency Operation Plan.

F. POST-EARTHQUAKE OPERATION

Medical help for the injured must be provided locally. Fire prevention, fire-fighting and life-saving services must be adequate.

These operations are part of the County's responsibility and include:

The very first steps are for the rescue teams to bring wounded and trapped people from damaged structures to the medical facility.

Transportation route to the Solid Waste Disposal Site must be kept open to clear debris from damaged areas.

Evacuation routes from danger areas to shelters (school) must be kept open.

PART II. CITY OF RIO VISTA

PART II. CHAPTER 15. LAND USE ELEMENT

A. EXISTING LAND USE, 1973

The land use of the City of Rio Vista since 1862 consisted of residential buildings, shops, factories, schools and churches with cemeteries. Although activities have been diversified, they concentrated on:

"Salmon Fishing & Canning":	1860's - early 20th century
"Vegetable (asparagus) growth & canning":	Early 20th century - 1930's
"Natural Gas & Farm Machinery":	1940's - 1970's
"Manufacturing & Commercial Recreation":	1970's -

except for some acreages in the northeast, the City is quite built up within the 1973 City limits. Older parts located within the Central area are discussed in Chapter 24 "Central Business District".

The area along Front Street awaits an overhaul. The uses for cars and tractors do not maximize the best potential. Much more merchandizing space is needed in order to be able to compete with the spacious car agencies in nearby cities. Owing to lack of space the car dealers cannot even display anymore the ever-growing variety of annual new car types and designs on their already overcrowded car lots. Similar conditions exist with tractor dealers and repair stations.

With the decision by the State Highway Division to rebuild the Highway 12 bridge at a new location, new vistas open up for a variety of different land uses at the now existing Bridge area.

B. EXISTING ZONING

Before 1957 the City was divided into 5 zoning districts: Two residential, one commercial, one industrial and one agricultural district.

Work of revising the City's zoning ordinance went underway after adoption of the General Plan in 1957. Further updating culminated in the adoption of a new ordinance on October 3, 1968. Map and text have been published on October 16, 1968. This ordinance has been in force since 5 years.

The text shows the regulations for the 16 districts and the map depicts 9 of these districts. The districts are:

Symbol	District
R-1	Single Family Residential
R-2	Duplex Residential
R-3	Multiple Residential

Symbol	District
R-4	Residential - Professional
R-E	Residential - Estate
R-A	Residential - Agriculture
C-1	Neighborhood Commercial
C-2	Retail Business
C-3	General and Service Commercial
C-H	Highway Commercial
M-1	Manufacturing
M-2	Heavy Industrial
P-D	Planned Development
O-A	Open Area
P	Combining Parking
A-P	Combining Airport.

The City's zoning map outlines nine districts: R-1 to R-4, C-2, C-3, C-H, O-A and A-P. It shows the exact locations.

The zoning map does not reflect the 1957 General Plan in relation to Retail Business, General and Service Commercial and other Districts.

The City is surrounded by County Zoning District A-20, agricultural lots of 20 acres minimum size. This type of zoning and the close cooperation in planning and zoning spared Rio Vista from the familiar but unpleasant urbanizing sprawl along the major approach road.

C. FUTURE LAND USE

No special land use policy statements for the future are made in the 1957 General Plan for the City of Rio Vista.

Discussion . One of the purposes of planning is to reflect the desire of the Citizens to maintain or improve the quality of their lives within their environmental conditions. There are a number of human activities which are basic in the lives of the residents of the Rio Vista urban growth area. These activities demand different arrangements and shape the urban form. The activities are:

Dwelling	Servicing	Learning	Shopping
Recreationing	Socializing	Working	Moving

The first seven basic human activities are being interconnected by human and mechanical movements "moving", which is the subject of special attention in a separate Chapter 16, the Circulation Element.

CITY OF RIO VISTA PLANNING AREA * CALIFORNIA

PORTION OF THE SOUTHEASTERN SOLANO COUNTY PLANNING AREA

CITY OF RIO VISTA AND SOLANO COUNTY PLANNING COMMISSIONS



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- DWELLING**
 - SINGLE RESIDENCES
 - MULTIPLES
 - MOBILE HOMES

RECREATING
 - PARKS
 - G 'GOVERNMENT
 - R MARINA & RESORT
 - BL PUBLIC BOAT LAUNCH
 - PI PICNICKING
 - S SWIMMING POOL
 - F PUBLIC FISHING ACCESS
 - TL TOT LOT
 - BP BALL PARK
 - PP PUBLIC PIER
- SERVICING**
 - CH CITY HALL
 - PS PUMPING STATION
 - L LIBRARY
 - FP FIRE & POLICE STATION
 - E PG&E SUBSTATION & YARD
 - SDP SEWAGE DISPOSAL PLANT
 - U.S. ARMY STORAGE AREA
 - CY COUNTY MAINTENANCE
 - C CEMETERY
 - HY STATE HIGHWAY YARD
 - W WATER TOWER
 - GAS COMPANY YARD
 - JUNK YARD (CARS & BOILERS)

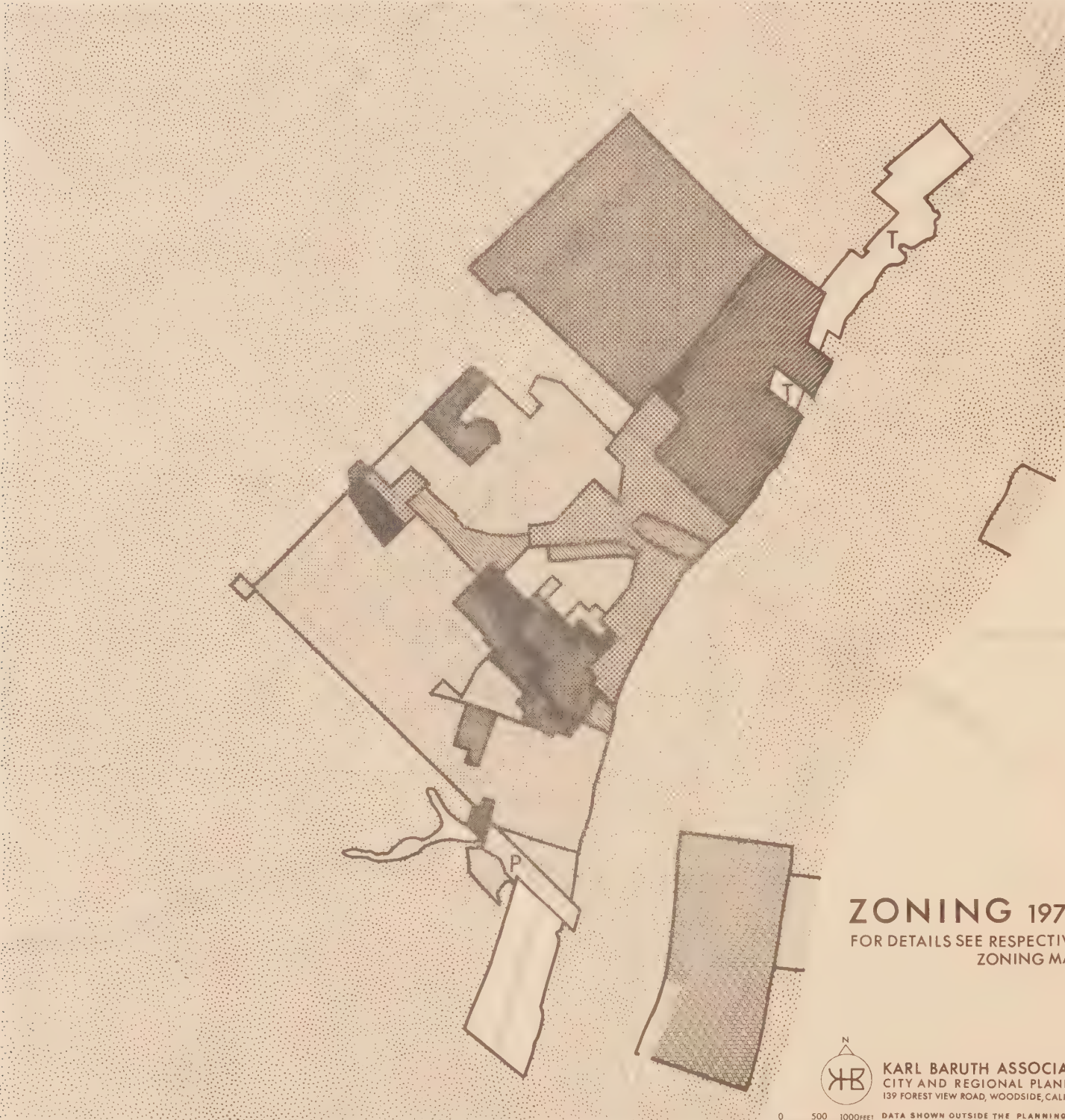
CITY WATER
 - DEPT.
 - C CITY DUMP
- SOCIALIZING**
 - Y YOUNG ADULT CENTER
 - FR FRATERNAL & OTHER ORGANIZATIONS
 - VB VETERANS BUILDING

LEARNING
 - ELEMENTARY SCHOOL
 - HIGH SCHOOL
 - PRIVATE NURSERY SCHOOL

WORKING
 - AGRICULTURE
 - GAS EXTRACTING
 - MANUFACTURING AND NON-MANUFACTURING
- SHOPPING**
 - RETAIL
 - BUSINESS & PERSONAL SERVICES

MOVING
 - STATE ROUTE 12
 - STATE ROUTES 84,160
 - LOCAL ROADS
 - P PUBLIC PARKING
 - TV TELEVISION TOWER
 - T TELEPHONE
 - MA MUNICIPAL AIRPORT
- V VACANT**

CITY OF RIO VISTA PLANNING AREA * CALIFORNIA
PORTION OF THE SOUTHEASTERN SOLANO COUNTY PLANNING AREA
CITY OF RIO VISTA AND SOLANO COUNTY PLANNING COMMISSIONS



ZONING 1973
FOR DETAILS SEE RESPECTIVE
ZONING MAP



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0 500 1000 FEET

DATA SHOWN OUTSIDE THE PLANNING AREA
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CITY OF RIO VISTA:

- R-1 SINGLE FAMILY RESIDENTIAL
- R-2 DUPLEX
- R-3 MULTIPLE
- R-4 RESIDENTIAL-PROFESSIONAL
- C-2 RETAIL BUSINESS
- C-3 GENERAL & SERVICE COMMERCIAL
- C-H HIGHWAY COMMERCIAL
- O-A OPEN AREA
- M-2 HEAVY INDUSTRIAL
- A-P COMBINING AIRPORT

SOLANO COUNTY:

- R-E1 R M2 R-E ESTATE RESIDENTIAL
- C-G GENERAL COMMERCIAL
- P PARK
- T TEMPORARILY UNCLASSIFIED
- M-G GENERAL MANUFACTURING
- A-20 EXCLUSIVE AGRICULTURE

SACRAMENTO COUNTY:

- C-O COMMERCIAL-RECREATIONAL
- AG-20 EXCLUSIVE AGRICULTURE
- AG-80 EXCLUSIVE AGRICULTURE

Man-made changes on, above and under the earth by using (or misusing) the grounds can result in land use conflict like premature urban or rural subdivisions, use of hazardous areas or the disregard of the fact that "everything relates to everything else."

Goals are: To provide land use policies which contribute to the overall quality of life for residents and visitors in the City of Rio Vista.

To recognize the use of land as a human activity with eight different major categories.

Policies are: Goals and policies should be developed for each of the eight human activity categories separately, and adhered by.

City and Council level of Government making decisions affecting land use shall analyse and evaluate the social, economic and natural environmental impacts.

Assessment and taxation policies shall minimize the current role of taxes as they influence land use.

1. Dwelling

Discussion: The growth of the Planning Area expressed in population and dwelling units (at 3.0 persons per unit) is shown in the following.

TABLE 15-1 POPULATION AND HOUSING UNITS 1970, 1980, 1990
City of Rio Vista

Year	Population	Units
1970	3,135	1,122
1980	4,900	1,630
1990	9,000	3,000

During the next two decades about 6,000 new residents are expected to dwell in about 1,800 new housing units.

a. New Residential Development in two Neighborhoods

The City of Rio Vista's urban growth area consists of two "neighborhoods" for about 3,000 residents each on about 320 gross acres per unit. The first unit is bounded by State Route 12 in the west. Church Road in the north, State Reclamation Board lands in the east and the 1973 built-up area of the City of Rio Vista in the south. The total area is estimated to be about 320 acres, excluding areas under flight pattern. The second unit is triangular in shape and is

bounded by State Route 12, Church Street and the new Highway 12 alignment to the north. The area of the unit is also about 320 acres depending on exact location of the new Highway 12, to be determined in years to come.

Roughly about 50 percent of the total area is to be occupied by housing units. According to the guidelines by the Citizens' Committee on Housing, new development should "have predominance of single-family dwellings with apartments added as needed, considering duplex prior to multiple dwellings." This would leave the density range in the City at about predominantly 5 to 10 housing units per 1 net acre. Net acre includes the residential lot area, minor and collector streets, utilities and local public open spaces. On the basis of 3.0 persons per housing unit on about 150 acres about over 3,000 residents would be settled in each of the two new neighborhoods.

The design of the neighborhoods should be prepared in sizable groups based on the "Planned Unit Development" concept of an overall neighborhood plan. This approach assures freedom of design and variety of housing types. As an example "single-family" residential development of six dwellings per acre density on 10 acres would result in sixty dwellings in the conventional way. Sixty "Cluster" residences on 2,500 square foot sites would leave 5 acres of common open space. Sixty 1-story condominium town-houses on 2 acres would leave 8 acres of common open space. The above examples show the versatility of "Planned Unit Development".

b. Golf and Country Club Community

A private Golf course, about 2 1/4 miles northeast of the City has been in use since about 1965 and has been allowed to deteriorate since 1968.

It is recommended that the facility be redesigned with a "community" around the enlarged Golf course to provide also residential areas of high quality on lots of about 10,000 square feet, also some smaller lots and an area for a luxury mobile home estate, altogether for a few hundred persons only. The "community" should be surrounded by a belt of five acres estates lots, as part of the community.

c. Other Developments

Apart from the above recommended developments, some residential growth might also occur to the west of the Highway 12, at some later stage. It should also be kept in mind that the Military Reservation might be moved to another place before 1990. In that case low density singly-family residential development is recommended. Also a strip of the range land overlooking the Sacramento River west of the military area may be considered as a reserve for low residential development. There is a need for Mobile Home Estates in the growth area.

2. Recreating

Discussion Areas particularly suited for outdoor "Parks and Recreation" purposes and links between those areas are already described and illustrated in Chapter 19 of this report.

The "Recreating" activities on the "Land Use and Circulation 1990" map in this report are based on acreage standards as shown in the following.

"Standards" are the current tool to measure adequacy and quality in planning for open space lands. The following standards should not be identified as optimum solutions, but as "minimum standards" and will serve to assure the future open space lands requirements.

Since the lands for the about 6000 new residents are now within the Solano County administration, the requirements for parks and recreation are as described in the County Ordinance 767 of July 24, 1971, and are printed in the following.

The list gives the outdoor park and recreation acreages for new subdivisions at a density of 3 - 6.9 dwelling units per acre (3.0 persons per unit).

TABLE 15-2 PARK AND RECREATION STANDARDS

Area Population Number	Neighborhood			Community Park
	Playground	Park	Playfield	
Acres				
3000	5	15	6	12.5

Indoor recreating is discussed in Section d. Socializing in this report.

3. Servicing

This category includes a wide variety of activities under the heading "Utilities" and "Public Buildings and Grounds."

a. Utilities

(1) Water supply

Discussion The City of Rio Vista's water supply is now pumped from three City wells producing 1650 gallons per minute. The City of Rio Vista and surroundings are between "marginal to adequate" for well yield from water-bearing rocks for the following land uses: Irrigation, heavy industry and municipal uses. RioVista area is within the highest area for maximum concentration of dissolved solids in ground water in the area has been found to exceed 500 mg/ l in the majority of wells sampled during period of record, which is generally acceptable for human consumption.

Goal is: To extend new water mains to Rio Vista's urban growth areas without subsidizing the expenses with tax revenue money.

Policy is: The City should adopt an annual on-going five year plan to finance the increasing of pumping and storage as needed, along with necessary water rate changes to fully support the water system. All growth areas should be annexed to the City when development is imminent.

(2) Liquid waste disposal

Discussion Rio Vista's sewer system is desperately in need of improvements, particularly with the sewer mains. Much available local money has to be set aside merely to keep up with the repair and maintenance program with little left-over for new improvements. Also the treatment plant must be modified in order to allow an effluence in full compliance with the new water quality standards. The existing plant site is big enough to allow plant additions owing to expected population increase.

Goal is: To stop polluting the waters by discharging insufficiently treated waste into the Sacramento River and to provide immediately for alternative means of waste disposal.

Policy is: Sewer lines should be extended to areas within the Rio Vista urban growth area in coordination with annexation to the City.

(3) Solid waste disposal

Discussion The City of Rio Vista leases the solid waste disposal site and the sanitary service is privately operated. Only municipal waste is received apart from drilling mud from the gas well operations. The site has an approximate 128 acre-feet remaining capacity, sufficient to serve the planned population increase to 1990, according to an unadopted Countywide Solid Waste Study by Yoder-Orlob. Local opinions estimate the existing site capacity sufficient for 5-7 years only.

b. Public Buildings and Grounds in the City of Rio Vista

Discussion The major Public Building in the Planning Area is the Montezuma Elementary School, 1st - 6th grade are in existence. All existing and developing public buildings in the future are related to the Rio Vista urban growth area.

(1) Fire House

The City's fire house is inadequate in many respects. The quarters of the Montezuma and the Delta Fire Districts should be moved out towards the area of the City's western limit. The new fire station will serve of the Rio Vista growth area.

(2) City Hall

The existing City Hall is too small to accommodate additional staff to serve the growing population. Any move to a new site is acceptable only after sufficient growth occurred to justify the expenses. In the meantime the existing facility should be adjusted to the needs. After the move the existing site could be used for commercial and/or community purposes.

It is recommended that the site should not be smaller than about 4 acres, including parking. A new civic center site could be found near the western City limits area.

Goal is: To provide facilities which will ensure the residents the highest possible administrative services at the least possible expenses.

Policy is: The City, County and State (if) government services should be combined into one Rio Vista Civic Center.

(3) Medical Facility

There are two medical doctors, two dentists, one chiropractor and one optometrist serving the Rio Vista area now. There are no medical facilities, not even a first-aid station, in operation. In case of need a local ambulance provides services to outlying hospitals. It is for this reason that the Southeastern Solano County Planning Area and the City of Rio Vista have since long been identified as a "health service scarcity area". The creation of a local medical facility is justified within the framework of the mandatory "Safety Element" of the General Plan related to emergency planning, as shown in Chapter 23 of this report.

Assuming 2.2 beds for 1,000 population and visitors, 18 beds would be needed by 1980 and about 30 beds for 13,000 persons by 1990. The lot should not be smaller than about 2.5 - 3 acres, including parking.

Goal is: To provide locally the medical facilities necessary for - at least - emergency needs, and additional services.

Policy is: The City should immediately start to search for financial sources in cooperation with participating agencies (County, state, federal), or others.

d. Socializing

Discussion It seems necessary to try to counterbalance the continuously increasing dehumanizing mechanization away from natural and cultural life and the often lonely one-way plastic screen communication on television. Face to face contacts with other people of all ages according to personal

choice are needed. Because of the wide range of individual human beings and their styles of life, stimulus for a great variety of indoor activities in Rio Vista should be provided.

The Rio Vista community will feel the range of private tastes and needs owing to more visitors and recreationists choosing the Delta as their destination. The visitors can be expected to introduce a certain amount of nonconformity in personal styles of their appearance and behavior. This may bring to bear an increasing awareness in the residents of the need to develop own individuality and life style and of own needs for more varied activities.

The indoor facilities for socializing are provided by public and private organizations, including:

- Recreation and hobby groups (theater, music, arts and crafts, indoor sports and games, etc.)
- Churches and auxiliary church organizations
- Service Clubs, lodges
- Young adult groups
- Others.

The indoor "recreation and hobby groups" for all ages should be located in the Community Wing of the future Civic Center. This will be the major facility for human face to face contacts in Rio Vista. Other groups like churches, lodges, etc. will hold organized meetings at their buildings. Space requirements and location of these groups can be according to needs. Space requirements for the Community Center are already included in the about 4 acres for the Civic Center.

Goal is: To provide a variety of indoor stimuli for human face to face contacts of public nature for all ages and interest groups.

Policy is: The City should include a "Community Wing" in the design of the future Civic Center.

e. Learning

In the City of Rio Vista educational services are provided by two nursery schools, two elementary schools, one intermediate school, combined with elementary school and one high school. The Delta Community College in Stockton, with evening courses in Rio Vista High School provides additional two years education for about 50 residents of Rio Vista at this time.

In the Rio Vista urban growth area school population may reach 3,000 students by 1980 and 5,500 by 1990. According to California State Department of Education statistics, about 4 new elementary schools would be needed with a total space requirement of about 40 acres.

School enrollment in Rio Vista is shown in the following Table.

TABLE 15-3 SCHOOL ENROLLMENT 1960, 1971, 1972, City of Rio Vista

	1960	1967	1971	1972
Riverview School)		350	391	346*
White School)	559	285	252	349**
High School	391	495	503	427
	950	1130	1213	1122
Includes 45* and 43** students from Isleton.				

Source: River Delta Unified School District, Rio Vista, March 1, 1973.

The State also assumed up to 2,400 students in a high school, which would mean that the present high school would be able to accommodate all 8th and 12th graders to 1990 - if that seems educationally desirable. It is up to the school board voters at that time to decide whether a new high school is needed. If the vote is in the affirmative, a 40 acre site on the State Reclamation Lands is shown on the map tentatively. The State Board of Reclamation would have to agree to the school site location first.

f. Working

(1) Agriculture

No agricultural land-use of sizable commercial value exists within the City limits, with the exception of barley and similar crops.

No agricultural land use is planned for the future in the city's urban growth area. Reasons for annexation to the City is urbanization (not agriculture) and the need for urban services from the City.

(2) Mineral extraction

Within the City limits 6 dry gas fields are located. Five more gas fields are located within the urban growth area.

(3) Manufacturing & Non-Manufacturing

Discussion The impressive list of existing manufacturing enterprises include the since 1917 established Blackwelder farm machinery and detachable waste collection systems, manufacture of special equipment and contract metal fabrication. The Amerada-Hess Corporation is active in natural gas and

condensate production and Standard Oil Company of California and other companies are concentrating on gas production. The existing gas fields may be depleted by the end of the 1970's, if no new gas wells are drilled or the existing ones deepened. The gas industries are aided by Halliburton Services and Hunnicutt & Camp Drill Company oil and gas drilling, cementing, testing and other related services.

The dredging work for the Sacramento deep water channel is provided locally by the Olympian Dredging Company of San Francisco and Dutra Dredging Company of Livermore.

The Asta Construction Company provides highway construction and concrete ready mix services and the Delta Construction Company works in road construction, grading and paving.

Future industrial development in the urban growth area is concentrated to the north and east of the existing City. This is related to existing industries, wind direction and transportation. The area north of the existing Blackwelder enterprises of about 35 acres is proposed to be used for general manufacturing. Other industry is proposed northeast of Airport Road with about 50 acres and another area of about 30 acres northeast of Church Road. Both areas are bounded by the re-routed Highway 12. No specific types of industry are now proposed for the Industrial areas, since there are long-term uncertainties for industrial development.

The area between St. Francis Drive extension and State Route 84 is recommended for Service & General Commercial and/or Industry on 50 acres. A strip along both sides of Highway 84 is to be excluded from this use and to be put into multiple-residential classification.

With the planned growth of the City it may one day become feasible to move the existing Rio Vista airport to another location. In that case the airport lands of over 100 acres are recommended to be used for a wide variety of industrial operations to be planned within an "industrial park" setting.

The total amount of manufacturing types of lands are about 250 acres providing work for about 2500 - 5000 workers, depending on type of industry. A few of the lands are now owned by the State Reclamation Board and necessary arrangements have to be made with the Board.

Goals are: To enhance through industrial development the quality of life for all persons through the generation of productive employment opportunities, the generation of public resources and the generation of technological innovations.

To provide appropriate landscape buffer strips around industrial areas for protection of adjacent land uses and protection of property values.

Policies are: Industrial growth should be staged in such a way that areas within the existing City limits will be developed first. All growth areas receiving services from the City should be annexed to the City when development is imminent.

Acceptability of an industry should be based on the ability to conform to performance standards. No industry should be acceptable which emanates any pollution or is otherwise offending the environment.

g. Shopping

Discussion The taxable sales are now provided for by about 100 outlets within the 1973 City limits.

The retail trade potential which may be attracted to the shops in the City of Rio Vista will have about 4,900 and about 9,000 residents respectively. In addition, about 1,096 and 1,603 average daily visitors are assumed to vacation in the area by 1980 and 1990 respectively. Further it is anticipated that approximately 50% of the expected population in the remaining Planning Area also will shop in the Rio Vista Urban Growth Area. This brings the total average daily population figure for shopping calculation purposes to about 7,000 persons by 1980 and about 12,000 persons by 1990.

As indicated on the map "Land Use & Transportation 1990" the bulk of all commercial growth will concentrate in the greater Rio Vista Downtown area.

Commercial recreation demands for facilities like overnight accommodations, restaurants and other facilities for visitors are located along the Sacramento River waterfront area and are connected with downtown enterprises in the future.

The neighborhood shopping facilities for the two potential residential neighborhoods of about 3000 residents each are located at Church Road. Only local shopping needs are to be satisfied at the neighborhood center.

Highway commercial facilities are located along Highway 12, forming together with the waterfront commercial and downtown the "Rio Vista Triangle". Behind highway commercial, one row of single family houses may change from R-1 zoning into a denser use over the time.

Goal is: To provide shopping facilities for residents and visitors within the greater downtown area, along the waterfront and along Highway 12. Commercial uses along the waterfront to be integrated with multi-residential development.

Policy is: All new shopping facilities should be planned as a unit with adequate depth, parking, landscaping and a well designed building arrangement.

h. Moving

Circulation and land use are twin elements to be completely related to one another and are illustrated together on one map "Land Use and Transportation 1990". The circulation element is discussed in Chapter 6.

TABLE 15-4 URBAN LANDS USE SUMMARY TABLE - Rio Vista Urban Growth Area

Human Activity	Approximate gross acres		
	Sub - Category	Total	
	Existing (3270 resi- dents)	New (6000 resi- dents)	
Dwelling	215	300	515
Recreationing	15	77	92
Servicing	33	50	83
Socializing	2	4	6
Learning	50	80	130
Working	80	215	295
Shopping	70	25	95
Moving and vacant	175	90	265

D. EFFECTUATION

Owing to the smallness of Rio Vista and expected relatively slow growth no specific date for General Plan review can be recommended. It is suggested that at the time of completion of the first new neighborhood to the northwest of the City and the relocating of the airport is actively considered, a review of this General Plan may be timely.

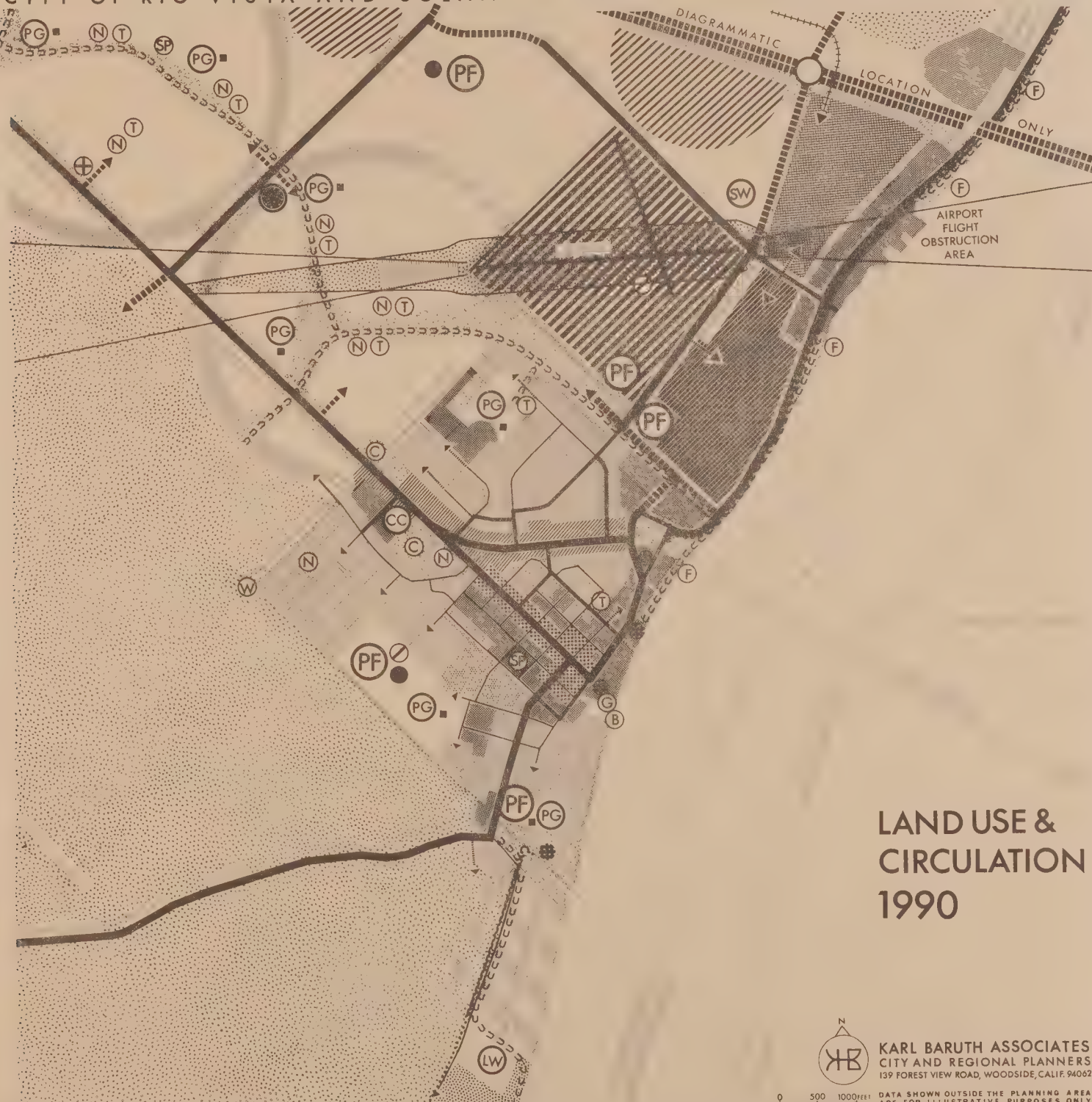
Priorities in the land use implementation has zoning. The existing zoning ordinance shall be made consistent with this General Plan. Besides zoning, other regulations such as a "mobile home ordinance" or "dedication for parks and recreation" shall be prepared.

Another priority has the preparation of a general outline sketch for the Front Street re-planning possibilities in order to stimulate early changes at the Sacramento River frontage.

CITY OF RIO VISTA PLANNING AREA * CALIFORNIA

PORTION OF THE SOUTHEASTERN SOLANO COUNTY PLANNING AREA

CITY OF RIO VISTA AND SOLANO COUNTY PLANNING COMMISSIONS



LAND USE & CIRCULATION

1990

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DATA SHOWN OUTSIDE THE PLANNING AREA ARE FOR ILLUSTRATIVE PURPOSES ONLY

GENERAL DISTRIBUTION AND LOCATION OF:

DWELLING	MINIMUM LOT AREA PER FAMILY UNIT	HOUSING UNITS PER GROSS ACRE
LOW DENSITY	6000 SQ. FT.	4-7
MEDIUM DENSITY	3000 "	8-14
HIGH DENSITY	1500 "	15-28

RESIDENTIAL LOW DENSITY RESERVE

GOLF AND COUNTRY CLUB COMMUNITY (10000 SQ. FT. TO 5 ACRES)

SERVICING

- CITY HALL 1973
- FUTURE POSSIBLE CIVIC CENTER
- LIQUID WASTE DISPOSAL PLANT
- SOLID WASTE DISPOSAL SITE
- MEDICAL FACILITY (INCL. CITY HALL, POLICE, FIRE, LIBRARY, ETC.)
- WATER TOWER

WORKING

- EXCLUSIVE AGRICULTURE
- GENERAL MANUFACTURING INDUSTRY
- INDUSTRIAL PARK
- IND. RESERVE

RECREATING

- TOT LOT
- SCHOOL PLAYGROUND
- SWIMMING POOL
- RIDING, HIKING & BICYCLING TRAILS
- 'GOVERNMENT BEACH'
- PARK LANDS
- OTHER LANDS: CONCEALED
- CEMETARY
- FLOOD PLAIN HAZARD AREAS

SHOPPING

- COMMERCIAL RECREATION
- NEIGHBORHOOD COMMERCIAL
- COMMUNITY COMMERCIAL
- SERVICE & GENERAL COMMERCIAL
- HIGHWAY COMMERCIAL

SOCIALIZING

- NEIGHBORHOOD PARK
- COMMUNITY CENTER
- PLAYFIELD LEARNING
- FISHING ACCESS
- ELEMENTARY
- HIGH SCHOOL
- MOVING
- PROPOSED HIGHWAY 12
- ARTERIAL
- COLLECTOR
- MAJOR LOCAL
- ROAD IN SCENIC AREA
- RIDING, HIKING & BICYCLING TRAIL
- RAILROAD
- AIRPORT CLEAR ZONE
- NOISE AREA, 65 db(A)
- HELIPORT
- PUBLIC BOAT LAUNCH & PARKING
- YACHT HARBOR AND RESORT

PART II. CHAPTER 16. CIRCULATION ELEMENT

A. TRANSPORTATION OVERVIEW

1. MTC and Corridor Study

Two agencies are now in process of transportation planning for the area, the 9 Bay Counties Regional Metropolitan Transportation Commission (MTC) and the State's Business and Transportation Agency, which is now preparing the inter-regional Sacramento - Stockton - San Francisco Bay Area Corridor Study. Both studies have no direct relation to the Rio Vista urban area.

2. Other Studies

a. Solano County General Plan

An important transportation feature is a proposed railroad line to Rio Vista.

B. FUTURE TRANSPORTATION, 1990

Discussion The City's population is assumed to grow from 3,135 (1970) to about 9,000 residents plus 1,603 estimated daily visitors to the Rio Vista Delta area by 1990.

Goal is: To recognize the need for transit transportation facility to end the "isolation" of Rio Vista.

Policy is: Public transit transportation (bus) should be strongly encouraged to and from Rio Vista to allow more citizens to visit or leave the Rio Vista Delta area.

C. FUTURE ROAD TRANSPORTATION, 1990

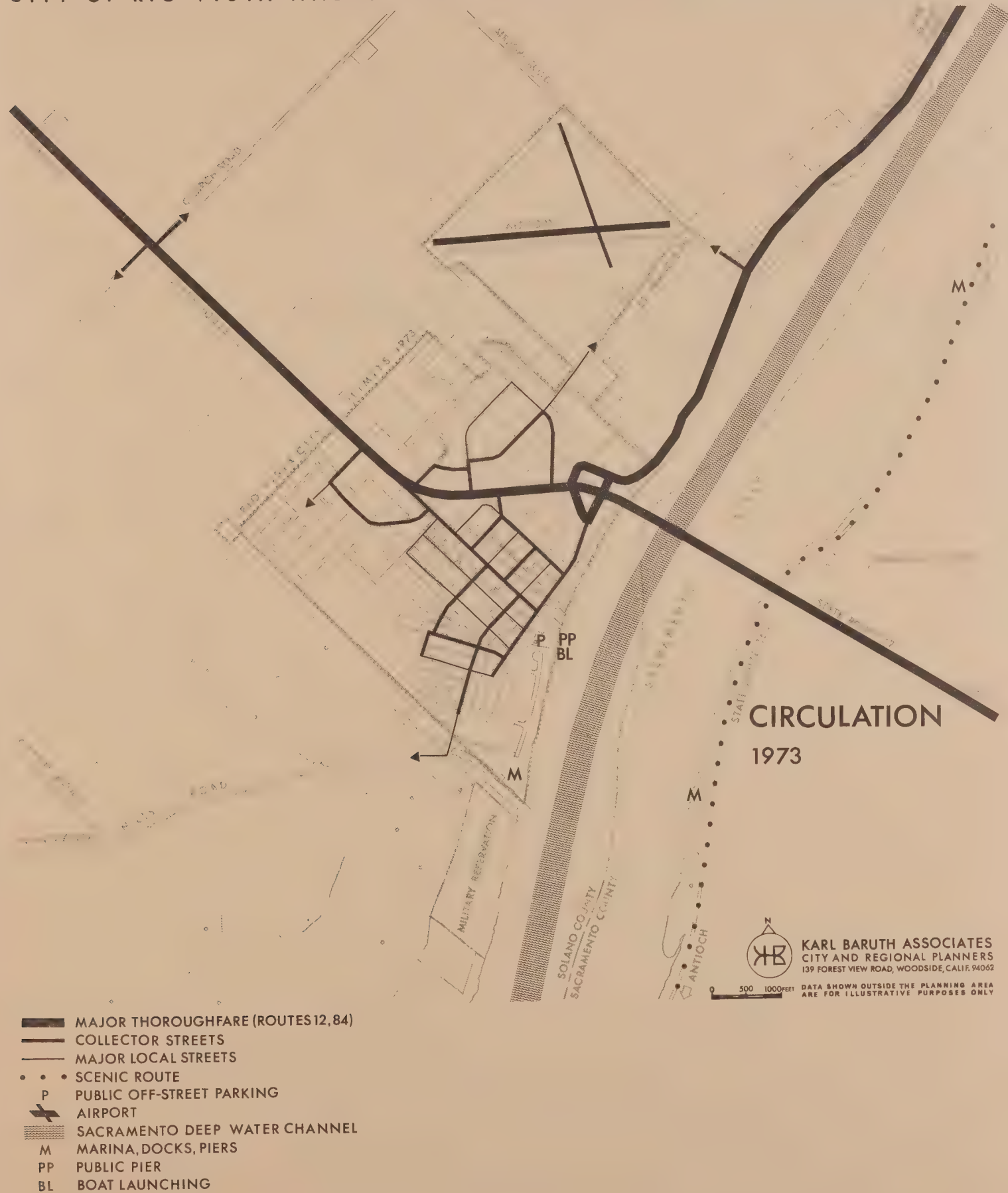
Discussion The nearest urban areas to Rio Vista (Fairfield, Lodi, Antioch) are 20 miles away. Owing to the poor state of the only main road (Highway 12) connecting Rio Vista with the outside world, Rio Vista is "isolated" in some respects. Another main reason for the isolation is the lack of any public transportation, which is especially hard on young people under the age of 16, elderly or sick people and those who do not own a car or those who do not wish to use a private car. The latter category is increasing owing to financial and other inconveniences of private car driving.

Even though the automobile will not be replaced in the near future, public policy should be to end Rio Vista's isolation through the introduction of public bus transit.

CITY OF RIO VISTA PLANNING AREA * CALIFORNIA

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Such a system is a local alternative to the private passenger car and a "must", with financing possibly through MTC channels. The bus terminal in the City should be located around the Main Street - Front Street crossing area.

State Highway Route 12 rerouting in connection with a new Sacramento River Bridge is recommended to be located in the north of the City. This is one of the four alternatives proposed to the City of Rio Vista by the State Division of Highways. The "Highway 12 Association" (President: Braid Pezzaglia) is actively engaged to continuously improve the conditions of Highway 12.

Road connections between the southern part and northern part of the City - divided by State Highway 12 - exist now only by 5th Street from the south. From the northern part Hillsdale Terrace, Gardiner Way and Virginia Drive connect to Highway 12. Another connection has been added in the plan, east of Virginia Street to extend Front Street to the Blackwelder enterprises in the future.

A short extension of 2nd Street to the northeast is planned to connect with Front Street.

St. Francis Drive is extended to connect with rerouted Highway 12 in the future.

Goals are: To provide for the sizable number of non-drivers a reliable and widespread public bus transit system with a bus terminal in the downtown area of Rio Vista.

To press towards the upgrading of Highway 12 to freeway standards and construction of the bypass and new bridge as soon as possible.

To coordinate the construction of transportation facilities with urban development with high design standards.

Policies are: A concerted effort (MTC, State, County, Chamber of Commerce and other appropriate agencies) should be undertaken to provide bus connections to surrounding urban areas.

Interested citizens, the "Highway 12 Association", City and County Government should in concerted effort press the State Division of Highways for a higher priority rating of planning and construction, through the Assembly and Senate representative.

Urban development should coincide with annexation to the City. Development along existing Highway 12 at the designated Rio Vista urban growth area should be away from the road to allow for view and noise buffer zones. Only selected access from Route 12 is permissible.

1. Future Road System

The City's urban growth area's road system is divided into

- a. Freeway;
- b. Arterial;
- c. Collector;
- d. Major Local;
- e. Roads passing through scenic areas.

The functions of the first three road types are already explained in Chapter 6. Major local roads serve to connect collectors with the minor local road network.

The City's "Select System of City Streets" and classification of roads in the General Plan should be comparable. All select system roads are shown on the map "Land Use & Circulation, 1990".

The following list gives the proposed select system in the Rio Vista area.

a. Freeway

New route to the north of the City to the new bridge.

b. Arterial

The proposed arterials (full length or in part) are:

Montezuma Hills Road and 2nd Street;
Existing Highway 12;
Main Street;
Church Road;
Airport Road;
Front Street and extension northeast;
St. Francis Drive and extension northeast to freeway 12 overpass and connection with Route 84;
Future road along Blackwelder enterprises and between Rolling Green Drive and the Airport;
"Amerada Hess Corp." Road.

c. Collector

The proposed collectors (full length or in part) are:

Drouin Drive;	5th Street;	St. Francis Way;
Hillside Terrace;	Logan Street;	Virginia Drive;
Gardiner Way;	California Street;	State Route 84;
Flores Way;	Front Street & Extension;	Airport Road.

d. Major Local

The proposed major local roads (full length or in part) are:

Sierra Avenue;	South 4th Street;	5th Street;
Tahoe Drive;	Bruning Ave;	4th Street;
Yosemite Drive;	St. Gertrude Ave;	3rd Street;
Morgan Lane;	Riverview Ave;	Flores Way;
7th Street;	Sacramento Street;	Hillside Terrace;
Montezuma Street;	Delta Way;	Gardiner Way;
6th Street;	Crescent Drive;	Virginia Drive.

e. Roads passing through scenic areas

These roads are discussed in Chapter 22.

D. RAIL TRANSPORTATION

A railroad feederline of 12 miles length from the Sacramento Northern Railway is proposed to enter the Rio Vista industrial areas under the new Highway 12 overpass. This location is chosen because the Highway 12 ramp to the Bridge is at that point already high enough to permit easy passage for rail traffic under the ramp. The location of the rail tracks and the Highway 12 route and overpass is shown on the map "Land Use & Circulation 1990" only diagrammatically. More exact studies will be needed at the time feasibility for these facilities is proven.

E. AIR TRANSPORTATION

The existing Rio Vista Municipal Airport has two runways, of which the east-west one has a length of 3,200 feet. At this time there are no noise problems or flight obstructions. The airport is used by private planes for business and commercial purposes, like crop dusting.

Conflict of land use may develop in the future with further growth of the City of Rio Vista towards Church Street. If that occurs and all the lands around the 'Noise Area' have been built up and if more growth is imminent, the relocation of the municipal airport should be considered. If the decision for a new airport location is made in the affirmative, a new site is shown diagrammatically on the map for further consideration. The location is on State Reclamation lands and subject to agreement.

F. EFFECTUATION

The implementation tool of the City's transportation element is the broad based participation in the State's Highway 12 construction priority deliberations. Land use - airport conflicts can be avoided by proper timing of orderly development and airport relocation, as expressed in the policies of this element.

PART II. CHAPTER 17. HOUSING ELEMENT

SECTION 1. PURPOSE AND NEEDS

A. STATE LAW REQUIRING HOUSING ELEMENT

State law requires that local general plans shall include:

"A housing element, to be developed pursuant to regulations established under Section 37041 of the Health and Safety Code , consisting of standards and plans for the improvement of housing and for provision of adequate sites for housing. This element of the plan shall make adequate provision for the housing needs of all economic segments of the community. "

B. INTERGOVERNMENTAL COORDINATION

Southeastern Solano County and the City of Rio Vista are jointly involved in the housing element planning process during the planning program.

Rio Vista with 3270 population is the only settlement within an over 20 miles radius of the City (except of Isleton) and is the only housing market in the area. Owing to its relative isolation Rio Vista is in a special situation. Solano County's housing problems in urban areas - in contrast to Rio Vista's - is part of a countywide, even multi-county or regional approach.

C. INTERAGENCY COORDINATION

Coordination with Housing plans of other agencies is assured through cooperation with local public and quasi public bodies (planning commission and legislature), regional bodies (ABAG, CIR), State (Division of Housing and Community Development) and other agencies.

D. RELATION TO OTHER PLAN ELEMENTS

The Housing Element is part of the nine mandatory elements for the Southeastern Solano County General Plan Program. Housing is planned to develop only in the Rio Vista urban growth area. Agricultural - rural housing is not part of this study.

One of the relations is stressed through goal formulations in the early process for the General Plan preparation. Another relation to other plan elements include the servicing by City Hall, medical facility and liquid and solid waste disposal.

Housing and working is closely related with new areas for industry planned in relation to new areas for dwelling. Recreation and housing is intimately interwoven in the

overall design of the new housing areas through the formulation of an interconnected open space system. The open space system is formed by tot lots, neighborhood parks, school playgrounds and other connecting open lands.

Housing and shopping is interrelated with new neighborhood shopping facilities in new housing areas and with the long established Community Commercial along Main Street. Schools and their playgrounds are an integral part of the housing design as are the roads.

E. CITIZEN PARTICIPATION

A cross section of the citizenry is organized into eight committees including one Citizen Committee on Housing. This Committee consists of members of the City of Rio Vista and of the rural areas of the Southeastern Solano County Planning Area. The Citizens Committee reports to the Steering Committee consisting of 5 members representing the Planning Commission and Council of Rio Vista and the Planning Commission and Board of Supervisors of Solano County, with the Rio Vista City Administrator as Secretary.

At least six broad goals for the Housing Element have been identified by the citizens. These goals are listed below and have been adopted by the Citizen Committees on "Housing" and on "General Planning Policy".

The goals are:

To promote and insure the provision of adequate housing for all persons regardless of income, age, race, or ethnic background.

To promote and insure the provisions of housing selection by locality, type, price, and tenure.

To promote and insure open and free choice of housing for all.

To preserve the low density residential housing character of Rio Vista except at specific areas as indicated in the General Plan.

To demand that natural features (topography, Sacramento River view, etc.) are being "worked in" to the overall design of the new residential areas.

To enhance the quality, character and "livability" of residential areas.

The goals, policies and implementations are discussed below in Section 4 "Housing Program".

SECTION 2. PROBLEMS

As can be seen in the following statistical data, there is only a relatively small percentage of deteriorating or delapidated houses. This does not represent a housing problem.

A. INVENTORY OF EXISTING HOUSING UNITS, 1970

The inventory is combined into two groups, first the Southeastern Solano County Planning Area, second the Rio Vista Urban Growth area where existing data are available.

1. Southeastern Solano County Planning Area, including Rio Vista

The following statistics give the information of housing conditions within the 285 square miles covering all of the Southeastern Solano County Planning Area, including the City of Rio Vista.

TABLE 17-1 OCCUPANCY, UTILIZATION, AND FINANCIAL CHARACTERISTICS OF HOUSING UNITS - Southeastern Solano County Planning Area, 1970

All housing units	1523	Lacking some or all plumbing facilities	
Vacant - Seasonal and migratory	10	All units	34
All year-round housing units	1513	Owner occupied	14
		Negro	--
Tenure, race and vacancy status		Renter occupied	13
Owner occupied	848	Negro	--
Cooperative and condominium	--	Vacant year-round	7
White	834	For sale only	--
Negro	--	For rent	2
Renter occupied	547		
White	529	Rooms	
Negro	1	1 room	34
Vacant year-round	118	2 rooms	46
For sale only	11	3 rooms	125
Vacant less than 6 months	11	4 rooms	354
Median price asked \$20,800		5 rooms	392
For rent	56	6 rooms	304
Vacant less than 2 months	30	7 rooms	137
Median rent asked	\$90	8 rooms	72
Other	51	9 rooms or more	49
		Median	5.0
Complete kitchen facilities and access			
Lacking complete kitchen facilities	36	All occupied housing units	1395
Access only through other living quarters	1		

TABLE 17-1 - Continued

Persons		Persons per room	
1 person	236	1.00 or less	1317
2 persons	470	1.01 to 1.50	64
3 persons	231	1.51 or more	14
4 persons	225	Units with all plumbing	
5 persons	125	facilities - 1.01 or more	73
6 persons or more	108		
Median, all occupied units	2.5	Contract rent	
Median, owner occupied units	2.5	Specified renter occupied units**	440
Median, renter occupied units	2.5	Less than \$30	10
Units with roomers, boarders,		\$30 to \$39	5
or lodgers	8	\$40 to \$59	66
		\$60 to \$79	100
		\$80 to \$99	65
Value		\$100 to \$149	120
Specified owner occupied units*	683	\$150 to \$199	17
Less than \$5,000	3	\$200 to \$249	1
\$5,000 to \$7,499	18	\$250 or more	7
\$7,500 to \$9,999	28	No cash rent	49
\$10,000 to \$14,999	97	Median	84
\$15,000 to \$19,999	236		
\$20,000 to \$24,999	148		
\$25,000 to \$34,999	91		
\$35,000 to \$49,999	40		
\$50,000 or more	22		
Median	\$19,300		

* Limited to one-family homes on less than 10 acres and no business on property.

** Excludes one-family homes on 10 acres or more.

The great majority of housing units are owner occupied. The year-round vacancy rate is high, because the Census counted empty migratory labor quarters. The vacancy rate for residents is relatively very low.

Only 34 out of 1523 housing units lack some or all plumbing facilities. About half of these houses are located in rural areas. There is no overcrowding. The value of houses is mainly over the \$20,000 level of 1970 price estimates. Median rent was \$84 three years ago.

As can be seen from following Table 17-2 more than half (843) of all units have been built after 1950 which shows a quite healthy building stock. Equipment is of a high standard, with air conditioning in exactly one-half of all units.

Over half of all units are occupied by 1 car households, slightly over 1/4 have two cars and about 7% had no cars in 1970.

Renters with relatively low income had to pay a higher percentage of their income (34.0) on rent. The renters in high income brackets paid only about 10% of their income for rent. 141 renters paid more than 25% of their income on rent in 1970.

TABLE 17-2 STRUCTURAL EQUIPMENT, AND FINANCIAL CHARACTERISTICS OF HOUSING UNITS - Southeastern Solano County Planning Area, 1970

All year-round housing units	1594	Gross Rent	
		Specified renter occupied units*	467
Units in Structure		Less than \$40	20
1 (includes mobile home or trailer)	1353	\$40 to \$59	43
2	59	\$60 to \$79	59
3 and 4	56	\$80 to \$99	96
5 to 49	126	\$100 to \$149	121
50 or more	--	\$150 to \$199	61
		\$200 to \$249	5
Year Structure Built		\$250 or more	-
1969 to March 1970	54	No cash rent	62
1965 to 1968	151	Median	\$96
1960 to 1964	224		
1950 to 1959	414	Gross Rent as Percentage of Income	
1940 to 1949	143	By Income	
1939 or earlier	608	Specified renter occupied units*	467
		Less than \$5,000	157
Heating Equipment		Less than 20 percent	32
Steam or hot water	23	20 to 24 percent	5
Warm air furnace	631	25 to 34 percent	30
Built-in electric units	49	35 percent or more	61
Floor, wall, or pipeless furnace	441	Not computed	29
Other means or not heated	450	Median	34.0
		\$5,000 to \$9,999	210
Basement		Less than 20 percent	136
All units with basement	369	20 to 24 percent	24
One-family houses with basement	284	25 to 34 percent	21
		35 percent or more	--
Selected Equipment		Not computed	29
With more than 1 bathroom	612	Median	16.7
With public water supply	1149	\$10,000 to \$14,999	65
With public sewer	1131	25 percent or more	--
With air conditioning	797	Not computed	6
Room unit(s)	635	Median	15.7
Central system	162	\$15,000 or more	35
		25 percent or more	--
		Not computed	4
All occupied housing units	1497	Median	10

* Excludes one-family homes on 10 acres or more.

TABLE 17-2 - Continued

Year moved into unit		Automobiles available	
1968 to March 1970	551	1	854
1965 to 1967	239	2	462
1960 to 1964	285	3 or more	68
1950 to 1959	243	None	113
1949 or earlier	179		

TABLE 17-3 CHARACTERISTICS OF HOUSING UNITS WITH HOUSEHOLD HEAD OF SPANISH LANGUAGE OR SPANISH SURNAME - Southeastern Solano County Planning Area, 1970

Census Tracts with 400 or more Persons of Spanish Language or Spanish Surname.			
All occupied housing units	152	Selected equipment	
		With air conditioning	88
Tenure and plumbing		With more than 1 bathroom	35
Owner occupied	82	With central or built-in heating system	79
With all plumbing facilities	82	With public water supply	92
Renter occupied	70	With public sewer	92
With all plumbing facilities	70	With automobile(s) available	146
Rooms		1	115
1 room	-	2 or more	31
2 rooms	8		
3 and 4 rooms	76	Value	
5 and 6 rooms	60	Specified owner occupied units*	82
7 rooms or more	8	Less than \$5000	--
		\$5000 to \$9,999	13
Units in Structure		\$10,000 to \$14,999	16
1 (includes mobile home or trailer)	134	\$15,000 to \$19,999	17
2 to 4	12	\$20,000 to \$34,999	36
5 or more	6	\$35,000 or more	--
		Median	\$18,400
Year structure built		Gross rent	
1960 to March 1970	23	Specified renter occupied units**	65
1950 to 1959	40	Less than \$40	--
1949 or earlier	89	\$40 to \$59	6
		\$60 to \$79	-
Persons		\$80 to \$99	16
1 person	12	\$100 to \$149	5
2 and 3 persons	88	\$150 to \$199	5
4 and 5 persons	27	\$200 or more	-
6 persons or more	25	No cash rent	33
Median	2.8	Median	--
Units with roomers, boarders, or lodgers	--		

TABLE 17-3 - Continued

Persons per room		Contract rent	
1.00 or less	126	Specified renter occupied units***	65
1.01 to 1.50	26	Median	..
1.51 or more	-		
Units with all plumbing facilities		Gross rent as percentage of income	
- 1.01 or more	26	by income	
		Less than \$10,000	38
Year moved into unit		25 percent or more	6
1968 to March 1970	42	35 percent or more	-
1960 to 1967	55	Not computed	24
1959 or earlier	55	Median	..

* Limited to one-family homes on less than 10 acres and no business on property.

** Excludes one-family homes on 10 acres or more

***Excludes one-family homes on 10 acres or more on all "no cash rent" units.

The above figures show that a great segment of the population lives mainly in owner-occupied single family homes between 3 and 6 rooms size at a median value of \$18,400 in 1970.

NOTES in relation to Tables 17-1, 17-2, and 17-3.

The statistics based on the 1970 U.S. Census sample data are estimates made through the use of ratio estimation procedures, applied separately for the 15 -and 20 - percent samples.

2. City of Rio Vista

The following Tables show the estimated 1970 Census data within the City limits of Rio Vista. This is not to be confused with the Rio Vista Zip Code 94571 informations of 1970 which include also many lands up to Hastings Island in the north and also parts of Sacramento County (Sherman Island).

TABLE 17-4 HOUSING CHARACTERISTICS, City of Rio Vista, 1970

	1960	1970		
Total Housing Units	926	1122	Change 1960 to 1970:	196 units or 21.2%
Population per Unit	2.8	2.8		
Occupancy/Vacancy, 1970			Type of Structure, 1970	
Owner occupied		722	1 Unit	857
Renter occupied		324	2 or more units	205
Vacant		76	Occupied mobile homes	60

The City of Rio Vista had 926 housing units by 1960 for a population of 2,616 persons. By mid-1965 the population increased to 2,855 persons living in 934 housing units plus 50 vacant units. By 1970 the population census counted 3,135 residents in 1122 housing units. The latest State figures issued on July 15, 1972 show that 3270 residents have been living in 1095 occupied housing units or 2.97 persons per occupied housing unit. In March 1973 about 20-25 houses made an exterior impression of looking deteriorating and about 14-18 units looked delapidated to your consultant. This relatively small percentage does not represent a housing problem.

Since the U. S. Census 6(six) permits for housing units have been given and in 1972, 1 (one) permit has been issued by the City. There have been 3 (three) residences vacant April 1972 with no vacancies for apartments or mobile homes.

TABLE 17-5 ESTIMATED POPULATION AND OCCUPIED HOUSING UNITS
City of Rio Vista, 1960 - 1972

Year	Population	Housing Units		Persons per Occupied Housing Unit
		Occupied	Vacant	
April 1, 1960*	2,616	855	n. a.	n. a.
Mid-1965**	2,855	762	25	3.20
Mid-1969***	3,225		1,070	3.01
Feb. 1, 1972*****	3,270		1,095	2.97*****
-	U. S. Census, 1960			
**	California State Department of Finance, 1965			
***	California State Department of Finance, 1969			
*****	California State Department of Finance, 1972			
*****	Figure derived by dividing population by housing units.			
n. a.	Not available			

TABLE 17-6 OCCUPIED UNITS BY NUMBER OF PERSONS IN UNIT AND MEDIAN
City of Rio Vista, 1970

One person	166	Five persons	95
Two persons	340	Six persons	49
Three persons	184	Seven persons	20
Four persons	182	Eight or more	10
Total	1,046 Occupied Units		
Median	2.6 persons per unit.		

The occupancy density in the housing units is healthy and compares well with the County figure.

TABLE 17-7 RENTER-OCCUPIED UNITS BY MONTHLY CONTRACT RENT,
City of Rio Vista, 1970

No cash rent	11	\$100 - \$119	73
Under \$40	7	\$120 - \$149	25
\$40 - \$59	46	\$150 - \$199	17
\$60 - \$79	78	\$200 - \$299	1
\$80 - \$99	59	\$300 or more	7
Total all rent levels	324.		

TABLE 17-8 HOUSING - PERCENT OF TOTAL RENTER - OCCUPIED UNITS BY
MONTHLY CONTRACT RENT CATEGORIES, City of Rio Vista, 1970

No cash rent	3.4	\$100 - \$119	22.5
Under \$40	2.2	\$120 - \$149	7.7
\$40 to \$59	14.2	\$150 - \$199	5.2
\$60 to \$79	24.1	\$200 - \$299	.3
\$80 to \$99	18.2	\$300 or more	2.2

TABLE 17-9 OWNER -OCCUPIED UNITS AND VACANT - FOR - SALE (if it would
be for sale) ONLY ONE -FAMILY HOUSES, City of Rio Vista, 1970

Number		Percent	Number		Percent
Under \$5,000	1	.2	\$20,000 - \$24,999	140	22.0
\$5,000 - \$9,999	34	5.4	\$25,000 - \$34,999	86	13.5
\$10,000 - \$14,999	87	13.7	\$35,000 - \$49,999	36	5.7
\$15,000 - \$19,000	232	36.5	\$50,000 or more	19	3.0
Total Number		635			
Median		\$19,213			

The majority of houses are in the \$15,000 - \$25,000 (1970 value) range and more houses are in the higher brackets than under \$15,000.

NOTES

Source of 1970 data: 1970 Census computer tapes of the U. S. Bureau of the Census, State of California, First County, File B plus Master Enumeration District List.

Source of 1960 data: Census of Population, 1960, U. S. Bureau of the Census, "General Population Characteristics," PC(1), Vol. 6, California, Tables 21, 22, 23, 24.

Table 17-4. The housing count covers all units, including vacant seasonal and migratory units. "Population per unit" is a comparative indicator calculated by dividing total population by total units, the figures are moderately lower than a figure based only on occupied housing units. Data for occupancy/vacancy, 1970 exclude vacant seasonal and migratory units. "Type of Structure" data include vacant "1" and "2" or more units", but only occupied "mobile homes or trailers"

B. INVENTORY OF UNITS TO BE REPLACED

No official figures by the 1970 U. S. Census are available for the description of "sound", "deteriorating", "delapidated" units, also sometimes called "substandard". There is no official guidance available for the State "substandard" classification.

The "Association of Bay Area Governments" (ABAG) brought out a procedure for estimating housing replacement for discussions. This procedure is followed in this study and four criteria have been identified. It should be noted that the procedure is not based on Rio Vista's building code.

1. Living in physically "substandard" housing units
2. Overcrowded
3. Involuntary "doubling"
4. "Overpaying"

1. Physically Substandard

a. All housing units lacking one or more plumbing facilities* were classed as physically substandard.

b. All housing units with substandard heating equipment** were classed as physically substandard.

b. 1) All housing units lacking complete kitchen facilities were classed as physically substandard.

c. Overcrowded

All households in units with 1.01 or more persons per room were classed as overcrowded.

d. Involuntary "doubling"

The phenomena of communes, extended families prevailing among certain ethnic groups, and other instances of voluntary "doubling" make it difficult to estimate how many households would split up if suitable housing in the appropriate rent or value range could be found. Therefore, no estimates were made of these cases.

e. "Overpaying"

A number of formulae have been advanced for determining what a household can afford to pay for housing. The nearest approximation to this in the Census is Gross Rent as Percentage of Income, counting 25 percent or more as overpaying.

* Hot piped water, flush toilet for this household only, bathtub or shower for this household only.

** Room heaters without flue, fireplaces, stoves or portable heaters, not heated.

The following Table 17-10 gives the items used in estimating the number of households needing housing, by tenure, gross rent or value, and number of bedrooms, and rent.

In order to adjust for cases counted more than once because of overlap among the following estimates, the following assumptions were made:

1. Overcrowding and lack of kitchen facilities are more likely to occur in substandard units.
2. Renter-occupants are not likely to be overpaying in overcrowded units.
3. "Net physically substandard" represents households in physically substandard units which have not been counted as overcrowded or overpaying.

TABLE 17-10 CENSUS INDICATORS OF HOUSING NEEDS 1970, Rio Vista

Criterion	1970 Census Classifications	Units
Physically Substandard	a. Lacking one or more plumbing facilities	14- 18
	b. Substandard heating equipment	240-260
	Standard heating equipment, below median rent or value for physically deficient unit (a. and b. above) of same size	80- 91
	b. 1) Lacking complete kitchen facilities	8- 12*
Overcrowded	c. Households with 1. 01 persons per room (1. 51 or more persons per room = 14 units)	30- 39
Involuntary Doubling	d. Husband - Wife subfamilies	n. a.
Overpaying**	e. Households paying 25 percent or more for gross rent	50- 71
* Part of the 14-18 substandard units.		
** Not estimated for owner-occupants.		
n. a. Not available		

C. DESCRIPTION OF HOUSING NEEDS, 1970

To arrive at a statement of what units are required to serve the households identified as needing housing, it was necessary to translate the data on households which are overcrowded and overpaying into descriptions of what would be appropriate.

Households in the "physically substandard" group were assumed to need standard housing of the same rent or value and size as the units occupied.

The statement of total housing needed will be produced by consolidating the 4 categories shown in the following Table 17-11. Priority replacement have 14-18 units.

TABLE 17-11 HOUSING NEEDED, 1970, City of Rio Vista

	Estimates only
Physically Substandard*	14- 18
Overcrowded**	30- 39
Overpaying***	50- 71
	94-128
Vacancy rate at 6 percent****	5- 8
Total Housing Units	99-136

* Priority replacement
** To be replaced
*** High rent can be minimized by rent subsidy, public-housing or a greater vacancy rate.
****A 6 percent vacancy rate permits mobility and a degree of choice in housing.

D. INVENTORY OF EXISTING LANDS

1. Vacant Land

The City of Rio Vista within the 1973 City Limits is built up in all residentially zoned areas, with the exception of about 80 lots in the Drouin Drive area and a bigger number of lots in the White School area.

The major vacant land considered for residential development is in the area towards Church Road and at a later stage north of Church Road, apart from multiple residential development along the Sacramento River.

E. POPULATION CHARACTERISTICS

This section considers statistics dealing with general social and economic characteristics as required by the State's guidelines. The following data were reported in the recent 1970 Census of population and are compiled from Census Report PHC (1)-223, Washington D. C., issued April 1972. All 1970 figures cover the Southeastern Solano County Planning Area and - if available - also the City of Rio Vista separately.

The Tables are presented in the sequence of the State's guidelines.

TABLE 17-12 INCOME, 1969 - Southeastern Solano County Planning Area,
including the City of Rio Vista

Income in 1969 of Families and Unrelated Individuals

All families	1,267	\$7,000 to \$7,999	108
Less than \$1,000	11	\$8,000 to \$8,999	88
\$1,000 to \$1,999	29	\$9,000 to \$9,999	83
\$2,000 to \$2,999	49	\$10,000 to \$11,999	196
\$3,000 to \$3,999	86	\$12,000 to \$14,999	161
\$4,000 to \$4,999	45	\$15,000 to \$24,999	192
\$5,000 to \$5,999	76	\$25,000 to \$49,999	52
\$6,000 to \$6,999	79	\$50,000 or more	12
Median income	\$9,753	Mean income	\$10,889

Families and unrelated individuals	1,572		
Median income	\$8,473	Mean income	\$9,631

Unrelated individuals	305		
Median income	\$3,088	Mean income	\$4,401

Type of Income in 1969 of Families

All families	1,267		
With wage or salary income	1,057	Mean wage or salary income	\$9,629
With nonfarm self-employment income	107	Mean nonfarm self-employment income	\$16,017
With farm self-employment inc.	83	Mean farm self-empl. inc.	\$5,643
With social security income	264	Mean social sec. income	\$1,702
With public assistance or public welfare income	59	Mean public assistance or public welfare income	\$1,302
With other income	373	Mean other income	\$2,441

Ratio of Family Income to Poverty Level*

Percent of families with incomes:			
Less than .50 of poverty level	1.9	1.25 to 1.49	6.1
.50 to .74	1.3	1.50 to 1.99	10.8
.75 to .99	3.9	2.00 to 2.99	26.0
1.00 to 1.24	2.7	3.00 or more	47.4

* Excludes inmates of institutions, members of the Armed Forces living in barracks, college students in dormitories and unrelated individuals under 14 years.

TABLE 17-12 - Continued

Income Below Poverty Level*

Families	89	Mean family income	\$1,966
Percent of all families	7.0	Mean income deficit	\$ 840
Percent receiving public assistance income	5.6	Mean size of family	2.81
With related children under 18 years	37		
Mean number of related children under 18	2.03		
With related children under 6 years	6		
Mean number of related children under 6	...		
Families with female head	17		
With related children under 18 years	17		
Mean number of related children under 18	...		
With related children under 6 years	---		
Percent in labor force	---		
Mean number of related children under 6	---		
Family heads	89		
Percent 65 years and over	34.8	Percent in labor force	82.9
Civilian male head under 65 years	41		
Unrelated individuals	73		
Percent of all unrelated individuals	25.1	Mean income	\$ 960
Percent receiving public assistance inc.	24.7	Mean income deficit	\$ 864
Percent 65 years and over	54.8		
Persons	323	Percent of all persons	7.3
Percent receiving soc. sec. income	29.1	Related children under 18 years	73
Percent 65 years and over	31.3	Percent living with both parents	68.5
Percent receiving soc. sec. income	81.2		
Households	130	Percent of all households	10.5
Owner occupied	54	Mean value of unit	\$15,000
Renter occupied	76	Mean gross rent	\$ 64
Percent lacking some or all plumbing facilities	4.6		

The income data shown in Table 17-12 suggest a high income, in fact the highest median and mean income in Solano County in the Census Year. At that time Solano County showed the highest personal income increase (1969 - 1970) of all the San Francisco Bay Area Counties and the California total.

Also in "per capita income" which is total personal income divided by population, Solano County is leading all 9 counties of the Bay Area and California's total percent increase between the year 1969 and 1970.

The number of families with income below poverty level 1970 (non-farm family of four income was \$3,743 in 1970) is relatively low, the lowest in Solano County. The Planning Area has the greatest percentage of older people in relation to its total population in the County and consequently the highest number of social security recipients.

TABLE 17-13 FAMILY COMPOSITION, 1970 - Southeastern Solano County Planning Area, City of Rio Vista

	Planning Area, incl. Rio Vista	City of Rio Vista		Planning Area, incl. Rio Vista	City of Rio Vista
Race					
All persons	4,136	3,135	White	4,012	3,045
Negro	3	3			
Percent Negro	0.1	0.1			
Age by Sex					
Male, all ages	2,090	(Male & Female)			(Male & Female)
Under 5 years	157	232	19 years	23	
3 and 4 years	66		20 to 24 years	112	
5 to 9 years	207	292	20 years	22	
5 years	39		21 years	25	
6 years	40		25 to 34 years	214	325
10 to 14 years	206	317	35 to 44 years	274	413
14 years	40		45 to 54 years	264	393
15 to 19 years	198	310	55 to 59 years	130	198
15 years	52		60 to 64 years	120	158
16 years	46		65 to 74 years	136	191
17 years	49		75 years and over	72	109
18 years	28				
Female, all ages 2,046					
Under 5 years	149		19 years	29	
3 and 4 years	56		20 to 24 years	131	
5 to 9 years	180		20 years	22	
5 years	35		21 years	28	
6 years	40		25 to 34 years	242	
10 to 14 years	186		35 to 44 years	259	
14 years	33		45 to 54 years	262	
15 to 19 years	189		55 to 59 years	132	
15 years	47		60 to 64 years	108	
16 years	48		65 to 74 years	121	
17 years	40		75 years and over	87	
18 years	25				

TABLE 17-13 - Continued

	Planning Area, incl. Rio Vista		Planning Area, incl. Rio Vista
Relationship to Head of Household			
All persons	4,136	In households	4,104
Head of household	1,395	Wife of head	1,051
Head of family	1,144	Other relative of head	1,619
Primary individual	251	Not related to head	39
In group quarters	32	Persons per household	2.94
Type of Family and Number of Own Children			
All families	1,444	Husband - wife families	1,051
With own children under 18 years	593	With own children under 18	539
Number of children	1,293	Number of children	1,180
		Percent of total under 18	86.3
Families with other male head	24	Families with female head	69
With own children under 18 years	14	With own children under 18	40
Number of children	25	Number of children	88
Persons under 18 years	1,367	Percent of total under 18 years	6.4
Marital Status	Male	Female	Rio Vista Male & Female
14 years old and over	1,560	1,564	2,355
Single	372	263	469
Married	1,102	1,097	1,652
Separated	15	13	24
Widowed	27	156	137
Divorced	59	48	73

This Table shows that the area's population has a relatively high median age, the highest in the County. The groups 5-19 of age (school age) has about 10 percent more males than females. The age groups from 2- to 44 years has over 5 percent more females than males. Since the major population growth is expected to occur by immigration, the importance of the birth rate component is minor.

Persons per household is a significant figure to arrive at for the purpose of forecasting residential needs. The Planning Area's number of persons per household is 2.94 and Rio Vista's 2.97 as shown in Table 17-5. For general planning purposes and for simple calculations of future housing needs the number will be rounded off to 3.0 persons per household.

Over 90 percent of all families in the Flanning Area have been husband - wife families in 1970. Not all households contain families, because a household may be comprised of a group of unrelated persons or one person living alone. The Table also suggests that there are about three times more females living alone or with children than males in the Rio Vista area.

The marital status shows that 70 percent of people in the Planning Area 14 years and older are married, 3 percent divorced and 20 percent not married. In the City of Rio Vista about 70 percent of persons 14 years and older are married (1,652), 137 are widowed, 2 percent (73) are divorced, 24 persons are separated and 20 percent (469) never married.

In the Flanning Area of the single persons 59 percent are male and 41 percent are female. Of all widowed persons about 85 percent are female and of all divorced persons 45 percent are female.

F. NEED

1. Current

a. Type

All housing types of current need - owing to being substandard - are of the single-family type.

b. Size

The size of the homes -owing to their age - contain generally two bedrooms per unit.

c. Price

According to now appearing classified ads in the Rio Vista 'River News Herald' the existing price range for old 2-bedroom homes is estimated between \$15,000 and \$20,000.

d. Location

The area of greatest existing occurrence of substandard housing is shown on the map "Year House Built" and is part of the area designated "To 1930".

e. Vacancies

Owing to population pressure and hardly any building acitivites the number of vacant residential units decreased sharply. The exact figures for building permits according to the City Administrator's Office are:

1970 : 24 permits	1972 : 1 permit
1971 : 15 permits	April 1973 : None.

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Only one residence has been demolished since 1970. There are hardly any vacancies in the City of Rio Vista in July 1973.

2. Future

Besides the need to remedy existing housing deficiencies in the Southeastern Solano County Planning Area and in the City of Rio Vista, there will be a continuing need to provide housing for new residents. Current forecasts are shown in the following Table.

TABLE 17-14 POPULATION AND HOUSING UNITS 1970, 1980, 1990 -
City of Rio Vista (at 3.0 persons per unit)

Year	Population	Housing Units
1970	3,135	1,122
1980	4,900	1,630
1990	9,000	3,000

During the next two decades about 6,000 new residents are expected to dwell in about 1,800 new housing units, or about 100 new annual units for 17 years. This is a figure exceeding all former years.

The figures do not include the now substandard dwellings to be replaced in Rio Vista (16) and north of the City (10). Neither are the units included to become substandard until 1990.

a. Location of new residential development in two neighborhoods

The City of Rio Vista's urban growth area consists generally of two "neighborhoods" for about 3000 residents each on about 320 gross acres per unit. The first unit is bounded by State Route 12 in the west, Church Road in the north, State Reclamation Board lands in the east and the 1973 built-up area of the City of Rio Vista in the south. The total area is estimated to be about 320 acres, excluding areas under flight pattern. The second unit is triangular in shape and is bounded by State Route 12, Church Street and the new Highway 12 alignment to the north. The area of the unit is also about 320 acres depending on exact location of the new Highway 12 to be determined in years to come, see Map "Land Use & Circulation, 1990" in this report.

Roughly about 50 percent of the total area is to be occupied by housing units. According to the guidelines by the Citizens' Committee on Housing, new development should "have predominance of single-family dwellings with apartments added as needed, considering duplex prior to multiple dwellings." This would leave the density range in the City at about predominantly 5 to 10 housing units per 1 net acre. Net acre includes the residential lot area, minor and collector streets, utilities and local public

open spaces. On the basis of 3.0 persons per housing unit on about 15 acres, about over 3,000 residents would be settled in each of the two new neighborhoods.

The design of the neighborhoods should be prepared in sizable groups based on the "Planned Unit Development" concept of an agreed upon neighborhood plan. This approach assures freedom of design and variety of housing types. As an example "single-family" residential development of six dwellings per acre density on 10 acres would result in sixty dwellings in the conventional way. Sixty "Cluster" residences on 2,500 square foot sites would leave 5 acres of common open space. Sixty 1-story condominium town-houses on 2 acres would leave 8 acres of common open space. The above examples show the versatility of "Planned Unit Development".

b. Golf and Country Club Community

A private Golf course, about 2 1/4 miles northeast of the City has been in use since about 1965 and has been allowed to deteriorate since 1968.

It is recommended that the facility be redesigned with a "community" around the enlarged Golf course to provide also residential areas of high quality on lots of about 1/4 acre and an area for a luxury mobile home estate, altogether for a few hundred persons only. The "community" should be surrounded by 5 acres estates lots, as part of the community design.

c. Other housing developments

Apart from the above recommended developments, some residential growth might also occur to the west of the Highway 12, at some later stage. It should also be kept in mind that the Military Reservation might be moved to another place before 1990. In that case low density single-family residential development is recommended. Also a strip of the range land overlooking the Sacramento River west of the military area may be considered as a reserve for low residential development.

Another suggestion of recent date - now under discussion - questions the possibility of using Rio Vista's industrial lands (existing and planned) for Marina - residential purposes.

G. REHABILITATION PROJECTS

The rehabilitation of houses can be enforced by the City of Rio Vista through codes. There are no Housing Authorities nor Redevelopment Agencies de facto in the City of Rio Vista.

SECTION 3. OBSTACLES

The following represents possible obstructions which may impede attaining the objectives of the housing plan.

A. POLITICAL

1. Discrimination

There is no official housing market discrimination neither in the Southeastern Solano County Planning Area nor in the City of Rio Vista by reasons of race, sex, family size or ethnic background.

B. ECONOMIC

1. Land Value

The current summary of appraisals indicates that the average value of single-family residential building sites in relation to total improved value of such property is 33.4 percent for the Bay Area.

2. Tax Structure (Property - Income)

The range of property tax rates per \$100 assessed valuation in Rio Vista was \$1.42 in Fiscal Year 1960/1961 and \$1.19 in Fiscal Year 1972/73.

3. Income

The identification of those impediments which prevent the expected needs from being met is - first of all - an inadequate family income (see Table 17-14). A \$20,000 home in 1967 in Solano County is selling for \$27,000 on today's 1973 market. It has been demonstrated, that without strong public effort and subsidy the type of housing is unlikely to be available to many families with incomes of less than \$15,000 and certainly will not benefit the elderly who will continue to grow in number, young families and the low-income families who will continue to seek housing in the Rio Vista urban growth area.

4. Allocation of State and Federal Funds

No funds for housing are now allocated or applied for from the state or the federal government in the Southeastern Solano County Planning Area or in the City of Rio Vista.

5. Construction Cost

The rising cost of shelter is a critical factor that is influencing present demand for single-family structures. Prices continue to rise now faster than incomes and the result is a declining number of potential buyers. During the past decade the single family home increased nearly two-fold. Estimates of production cost for tract homes show an increase of some fifty percent during the same period. Developers can evidently accomplish major production savings in fifty unit quantities or more but such economies cannot outrun the continuing trends of production costs that are confronting the construction industry in the area of housing.

a. Mobile Homes

Mobile home shipment in the U. S. during 1972 reached an all-time high, the third successive year this has happened. The 1972 record was 601,250 units, compared to 507,220 in 1971 and 401,190 in 1970. Of all houses built or produced in the U. S. in 1972 96 percent of those priced under \$15,000 and 75 percent of those priced under \$20,000 were mobile homes.

Out of 1122 total housing units in Rio Vista the 1970 Census counted 60 Mobile homes or trailers. By June 1973 the two mobile home parks within Rio Vista - based on a telephone survey - have 128 spaces with no vacancy.

Building permits issued by the City for single residences since the 1970 Census amounted to 39 units. Mobile homes increased at the same time - if the 1970 Census estimate is correct - by 68 units.

Mobile homes are the unrecognized revolution in American housing. New mobile homes sale showed the lowest percent change 1970 - 1971 in all of California in the Vallejo - Fairfield - Napa metropolitan area by 1.7 percent. (Stockton 118.8%, Santa Rosa 109.0%). However, the Rio Vista figures seem to indicate a certain attraction in "mobile" outdoor life on or near the Sacramento River frontage.

For many retired couples this way of living is often desirable. It seems very doubtful whether a mobile home for couples with children is really their preference or whether - owing to lack of financial means - their only possible choice.

6. Mortgages

Apart from land and construction costs, financing is the largest single cost of home ownership or rental. In times of tight money policies, mortgages to finance housing have to compete for money with other investments which give often a more profitable return to money-lenders. Conventional mortgage rates rose from 5 1/2 percent 10 years ago to 6 percent, later in the 1960's the rate reached about 9 %.

There is no reason to assume that the rate will go down since a chronic shortage of funds in the nation will be created by massive new public investments required like cleaning up the environment, urban regional transit, airport construction, national highway system and many other programs.

A plan advocated by leaders in the mortgage lending industry calls for home loans with interest rates that go up and down with other interest costs. The "variable - rate mortgage" would reexamine each loan every 5 years and adjust the rate to the general rate at that time. This type of a mortgage is in use since several years in some European countries.

C. EMPLOYMENT LOCATION

For many commuters the ride to work and back is depressingly long and tedious.

Further, it may have a grim effect on working efficiency, on family happiness and on the commuter's health and awareness.

The commute pattern within the Planning Area indicates that about 76 percent of all workers use a car as a means of transportation to work. About 19 percent drive outside the County, nearly 10 percent walk to work and about 4 percent work at home, as shown in Table 17-15. "Worked at home" includes a person who worked on a farm where he lived or in an office or shop at home.

TABLE 17-15 MEANS OF TRANSPORTATION AND PLACE OF WORK, 1970
City of Rio Vista

All workers	1,111	Walked to work	95
Private auto: Driver	885	Worked at home	18
Passenger	57	Other	56
Bus or streetcar	--		

The future commute pattern within the Rio Vista Urban Growth area is "local". This will be achieved by providing 295 acres of industrial employment areas for the future 6000 residents by 1990.

1. Residence in 1965

This category reflects the moving pattern between 1965 and 1970 often related to employment. "Different house" includes persons who lived in a different house in 1965 from the one occupied in 1970. In the Planning Area about 47% lived in the same house, about 19% lived in a different house in Vallejo - Fairfield - Napa area, and the rest outside of the area.

TABLE 17-16 RESIDENCE IN 1965, 1970 - Solano County, Southeastern Solano County Planning Area, incl. Rio Vista

Persons, 5 years old and over, 1970*	4,076	Different house:	
Same house as in 1970	1,937	Outside this SMSA	1,278
Different house:		North and West	1,185
In central city of this SMSA	71	South	93
In other part of this SMSA	687	Abroad (Foreign country)	38
* Includes "Moved, 1965 residence not reported."			

D. INSTITUTIONAL OR GOVERNMENTAL

Processing time of building permits in the City of Rio Vista is streamlined. The City's Planning Commission meets once a month. The Building Codes are up to date. There are no Union restrictions. Zoning Ordinances in the City do clearly outline the different zoning districts and permitted uses.

E. PHYSICAL

1. Land Availability

Within the City of Rio Vista's 1973 city limits hardly any lands are left for further residential growth, except in the Drouin Drive and White School area.

The direction of growth of the future Rio Vista urban area is described above in the "Land Use" section of this report.

2. Availability of Public Services

The existing water tower site is big enough to allow for additional water storage to meet some of the needs of a growing population of 9000 residents and 4000 visitors. No significant development should be allowed to occur which proposes its own well system. All development should be annexed as the City will bear tax burdens without supporting revenue, if they are not annexed.

The sewer plant has the needed capacity available for some expansion. Also the plant site is big enough to allow plant additions.

SECTION 4. HOUSING PROGRAM

A. METHOD

The Housing Element of the Rio Vista Urban Growth Planning Area intends to define long range and short range goals for housing and residential development and intends to establish short-range policies aimed at achieving these goals.

In the following each goal is followed by a policy statement needed to reach the goal and implementation steps which should always include wide participation of citizen groups.

Implementation actions which are expected to have a short-range impact on the housing situation are denoted with an asterisk*. Accountability rests with the City of Rio Vista's Planning Commission and the City Council.

B. GOALS, POLICIES AND IMPLEMENTATION

1. GOAL

TO PROMOTE AND INSURE THE PROVISION OF ADEQUATE HOUSING FOR ALL PERSONS REGARDLESS OF INCOME, AGE, RACE, OR ETHNIC BACKGROUND

a. Policy

The City of Rio Vista should work in cooperation with developers of new housing areas in developing a housing program which will reflect a desirable range of housing types, prices and tenure for all persons.

b. Implementation

1)* The City's Government should establish as an official policy the encouragement of providing also low- and moderate - income housing for families, singles and the elderly, by zoning and building codes.

2. GOAL

TO PROMOTE AND INSURE THE PROVISIONS OF HOUSING SELECTION BY LOCALITY, TYPE, PRICE, AND TENURE

a. Policy

The City of Rio Vista should work towards the maintaining of the existing housing stocks, by encouraging private and self-help housing rehabilitation programs and encourage sufficient production of new housing which insures selection.

b. Implementation

1)* Local Government should discourage concentration of low - and moderate - income housing in specific locality - if that is occurring - and work towards dispersal instead.

2)* Zoning should be used to encourage a range of housing types, prices and tenure. The Zoning Ordinance should be reviewed and - if needed- revised with the participation of an advisory citizens group.

3. GOAL

TO PROMOTE AND INSURE OPEN AND FREE CHOICE OF HOUSING FOR ALL

a. Policy

The City's General Plan should provide - as an expression of the City's Policy - ample areas for future housing purposes. Rio Vista should encourage the development and maintenance of an adequate housing reserve to attract people and employment.

b. Implementation

1)* Encouragement by the City of developers who arrange for open housing by helping to develop incentives for tract layout like utilization of techniques such as density bonuses; e. g. on development of not less than 2 acres; land write - downs and other innovative measures; as established in ordinances.

2) Increase supply of housing choice by reducing the costs of land development and house construction. Revise necessary codes and ordinances - while maintaining basic standards.

4. GOAL

TO PRESERVE THE LOW DENSITY RESIDENTIAL HOUSING CHARACTER OF RIO VISTA, EXCEPT AT SPECIFIC AREAS AS INDICATED IN THE GENERAL PLAN

a. Policy

It should be the City's declared policy to have predominance of single-family dwellings with apartments added as needed, considering duplex prior to multiple dwellings.

b. Implementation

1)* The General Plan should classify the future housing areas as "low density".

2) Zoning Ordinances shall be reviewed and - if needed - revised in order to be consistent with the General Plan.

5. GOAL

TO DEMAND THAT NATURAL FEATURES (TOPOGRAPHY, SACRAMENTO RIVER VIEW, ETC.) ARE BEING "WORKED IN" TO THE OVERALL DESIGN OF THE NEW RESIDENTIAL AREAS

a. Policy

The City should establish the official review procedure of applications to ask first for an overall design sketch of new residential areas, showing all physical features.

b. Implementation

1) The Development area along Front Street should be planned as one design unit, maximizing the Sacramento River view for all residents and visitors.

2)* The new residential areas of Rio Vista's urban growth area towards the northeast of the City should be designed in such a way as to emphasize the topographical features instead of bulldozing the area "flat" for easier engineering.

6. GOAL

TO ENHANCE THE QUALITY, CHARACTER AND "LIVABILITY" OF RESIDENTIAL AREAS

a. Policy

The City should establish an "annexation policy". All development should be annexed to the City to provide the services needed.

b. Implementation

1)* The concept of Planned - Unit development should be encouraged for the design of new housing areas. First an overall sketch should be prepared for each of the new two neighborhoods for about 3,000 residents each. The same overall outline sketch concept applies also for the Front Street development.

2) Excellence of design from the overall neighborhood scope to the details of landscaping and street furniture should be encouraged.

3) It should be recognized that the most important element in housing

is people. Each development should give special attention to the psychological needs (noise, density and space feeling, view etc.) of people. Recognize that the concept of good housing includes the spiritual as well as physical, the aesthetic as well as monetary values.

4) New housing supply should be related to the adequate supply of housing in relation to facilities like schools, open spaces, shopping, and well integrated utilities. City and school district should coordinate the use of Community meeting facilities.

C. WIDER ACTION NEEDED

Although the City of Rio Vista intends to undertake those improvements within their power, it should be recognized that the need for wider action is imperative. Support and participation at all levels of government is needed for the private sector to achieve the goals. Also support of the private sector is needed to encourage and assist Government to achieve the goals.

Each level of government is urged to undertake vigorous action on those problems under its jurisdiction.

D. MOBILE HOME AND ZONING

It is not recommended to have a special "Mobile Home" District in the City of Rio Vista and its urban growth area.

With the increasing quality of mobile homes and the financing available, a mobile home park should be located only within residential areas - like the conventional homes.

The minimum number of spaces in a mobile home park located within a residential area depends on economic and other criteria. Surely, there should not be less than about 15 spaces or so.

It is suggested that the question of Mobile Home Park location and zoning be studied and made part of the mandatory zoning ordinance updating process. Also the question of a special Mobile Home Ordinance should be considered.

SECTION 5. REVIEW AND UPDATE

A. CONTINUING HOUSING DATA

The Housing Element of the General Plan should be regularly updated and for that purpose housing data are needed.

The building departments of the City of Rio Vista and of Solano County are the central source of housing data relating to construction, demolition and rehabilitation.

B. ANNUAL CITIZEN REVIEW - BIENNIAL UPDATE

1. Annual Citizen Review

The annual review should incorporate:

a. Discussion of progress towards the six housing goals mentioned above. Evaluation of how many new housing units have been constructed during the year. Measurement of the housing costs and determination of whether such dollar rates can produce a proper supply in relation to demands.

b. Determination of demographic changes in the City or the Planning Area. Determination of whether there are unexpected changes in the size and composition of the City's or Southeastern Solano County's population which might suggest adjusting the Housing Element's action programs.

2. Biennial Update

The Mandatory two-year review period should produce:

a. If found necessary by the Citizens' Review Committee, preparation of a revised, updated and printed Housing Element. This should describe progress in achieving the housing goals of the City, make suggestions for improvement of the rate of progress - if necessary -, and suggest appropriate changes in the Housing Element or in other elements of the Rio Vista and Planning Area's General Plans. The report should present recommended programs for the next two years.

b. Consideration by the City Council of the City of Rio Vista's urban growth area of the updated report with either amendment, reaffirmation or adoption of the appropriate action program for the ensuing two years.

A review procedure at two years interval insures concern with the housing needs and attention for the continued improvement of housing conditions in the City of Rio Vista's urban growth area.

The adopted Housing Element and the changes every two years must be mailed to the

Department of Housing and Community Development
1121 "O" Street, Rm. 3344
Sacramento, California 95814.

PART II. CHAPTER 18. CONSERVATION ELEMENT

A. WATER

Discussion The City of Rio Vista's water supply now is pumped from three City wells for its 3,270 residents as shown in the following.

TABLE 18-1 WATER PRODUCTION CITY OF RIO VISTA
July 1973

Well number	Gallons of water per minute
7	600
8	450
9	600
Total	1650 gal/min.

Total city output per 24 hours is roughly about 1.5 million gallons and an estimated capacity is about double that output. The average consumption is now about .1 million gallons per day. This leaves still some possibility for satisfying growing demands, if the underground aquifers are continuously recharged, if the pumps have no failures and if policies of water resources conservation are observed.

The City's Water Tower has a storage capacity of about 2 million gallons -or just 2 days of existing water consumption. Water supply will be further discussed in Chapter 23 of this report.

B. EFFECTUATION: REGULATION OF THE USE OF LAND IN STREAM CHANNELS AND OTHER AREAS REQUIRED FOR THE ACCOMPLISHMENT OF THE CONSERVATION PLAN

Discussion Sloughs in Rio Vista's areas can be designed as a landscaped open space and be made a scenic asset to the residents of the Rio Vista urbanizing area. Adjacent land-use should be protected from hazardous development.

Goals are: To avoid channeling and paving of the slough valley northeast of Rio Vista which formerly absorbed the rainfall for the purpose of water conservation.

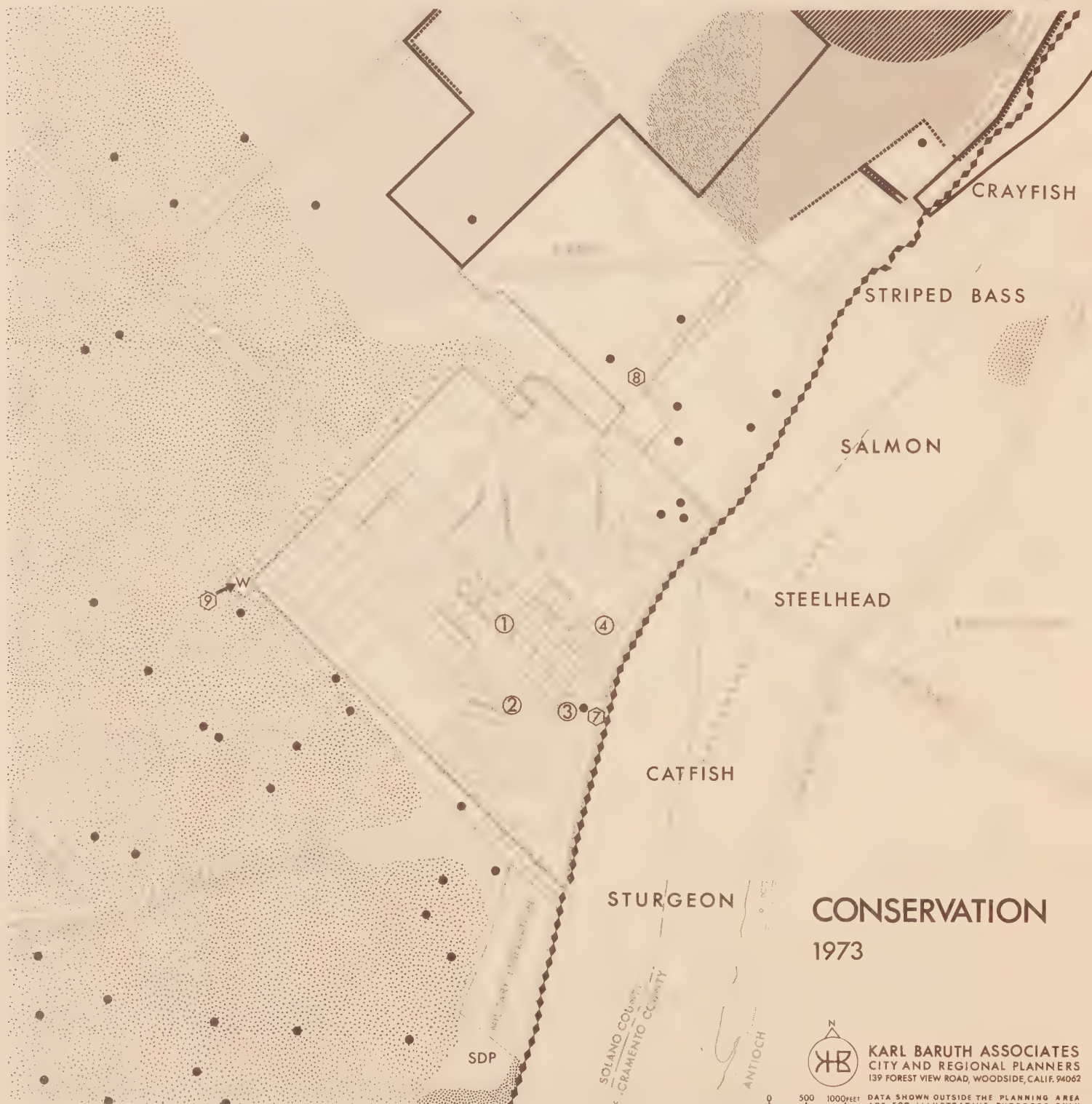
To design the slough valley as a waterway in open space and avoid encroachment of development.

Policy is: Streams and sloughs valleys should be protected from urban encroachment by establishment of "official plan lines" along sloughslides.

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WATER RESOURCES

- W WATER TOWER ⑧ CITY WATER WELLS
SDP SEWAGE DISPOSAL PLANT
..... LEVEE

LAND RESOURCES

- R. EARL STORIE RATING:
SOIL GRADE 1-10 VERY POOR
" " 16-34 POOR
" " 42-43 FAIR
" " 80-95 EXCELLENT
● NATURAL GAS WELL (PRODUCING)
SAND PITS
SANDY BEACH (DREDGING DEPOSIT)
SHOALS
BOUNDARY OF LANDS OWNED BY THE STATE RECLAMATION BOARD

◆◆◆ SACRAMENTO RIVER SHORELINE AND VEGETATION

WILDLIFE RESOURCES

- BASS RIVER FISH HABITAT
◆◆◆ SHOREBIRDS HABITAT ALONG RIVER

CULTURAL/URBAN RESOURCES

- ① BENSON HOME (OVER 100 YEARS OLD)
② ONE OF THE OLDEST STRUCTURE (NOW CHAMBER OF COMMERCE BUILDING)
③ BADER HOME (ORIGINAL LARSON HOME, VICTORIAN)
④ ONE OF THE FIRST HOUSES IN RIO VISTA (198 LOGAN ST.), STILL IN USE

CONSERVATION
1973



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CITY AND REGIONAL PLANNERS
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CONSERVATION PLAN



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GENERAL LOCATION OF:

- (W) WATER WELLS
- (P) WATER PUMP
- (T) WATER TOWER
- RANGELANDS AND WATERSHED AREAS
- TREES AND SHRUBS AT THE RIVER FRONT
- EXCELLENT AGRICULTURAL SOILS
- FLOOD CONTROL LEVEE
- FLOOD PLAIN

PART II. CHAPTER 19. OPEN SPACE ELEMENT

SECTION I. OPEN SPACE FOR THE PRESERVATION OF NATURAL RESOURCES

A. PRESERVATION OF PLANT AND ANIMAL LIFE

1. Fish

Discussion The eastern boundary of the Planning Area - the Sacramento River - is an essential system for most of the anadromous fishery resource in California. 100 percent of the white sturgeon and 90 - 95 percent of the American shad in California spawn in the Sacramento River system, while about two-third of the adult striped bass spawn in that system. It is estimated that 326,000 salmon and 39,200 steelhead trout enter the mouth of the Sacramento River. Other important fishery includes catfish and crayfish. The Lindsey Slough area has been declared "Fish and Wildlife Area".

A great variety of fish and wildlife makes the Sacramento River a major attraction for recreationists. The visitors' industry is also an important part of the economic sector and depends on fish and wildlife resources.

Goals are: To preserve areas of a variety of trees and shrubs to provide food and nesting potentials and year-round cover for birds.

To conserve and manage the waters of the river as needed for fish and marine life for the sport fishing sector of the tourist industry.

To preserve the river and related fish and wildlife.

Policies are: Major areas needed for food supply and nesting of birds should be acquired or long-term leases or other combinations should become effective, so that the use of these areas as a wildlife habitat is assured.

Conditions of amount of water flow, water pollution and water management should be such as to assure full supply of all fish species.

Species of fish and wildlife found within or outside in the immediate area of the City be maintained for their intrinsic and ecological value, as well as for the direct benefit of the residents and recreationists.

B. BEACHES, BANKS OF SACRAMENTO RIVER, WATERSHED LANDS

1. Beaches

Discussion The so-called "Government Beach" south of Rio Vista extends

from the City's Sewage Plant at a length of about 1 1/2 miles to the south along the Sacramento River. "Government Beach" is the only public beach in the area - but not "officially" accessible for the ever growing number of recreationists living on or visiting the area. The "Beach" is of regional and local concern.

Goal is: To discourage further deposit of spoil from the dredging of the Sacramento Water Channel along "Government Beach" and to encourage use of the public land for public enjoyment.

Policy is: Immediate joint action by Solano County and City of Rio Vista to assure that all necessary steps are taken towards the realization of the goal and provision of an alternate site to deposit the dredged material.

SECTION II. OPEN SPACE FOR THE MANAGED PRODUCTION OF RESOURCES

A. AREAS CONTAINING MAJOR MINERAL DEPOSITS

1. Sand and Gas Wells

Six dry gas wells are located in the City area. Within the City limits of Rio Vista is the plant of Asta Construction Company providing highway construction and concrete ready-mix services. Sand is used from the minor sand deposits located east of the City's Airport. The deposits consist of spoil from the dredging operation by the U.S. Corps of Engineers to keep the Sacramento Deep Water Channel to certain navigable depths and widths. The amount of sand available is limited to the amount deposited by the U.S. Corps of Engineers. Until now, all the sand deposited has been moved away for use in other locations.

There is no gravel production in the Southeastern Solano County Planning Area nor in the City of Rio Vista.

Goal is: To manage the sand pit in such a way that it does not interfere with adjacent land uses and road traffic.

Policy is: Sand use should be increased because it is an expendable product.

2. Creekside Use for Watershed

Discussion: About 150 yards to the north-west from the now existing City of Rio Vista city limits a creek runs at a length of about 2 miles into the Sacramento River. The creek location is part of the City's immediate urban growth area.

Goal is: To use the creek and the immediate lands on both sides for water production for the benefit of future residents in need of water supply by the City's water wells.

Policy is: Leaving the creek area in its natural state (instead of a concrete channel to the Sacramento River), rain water can percolate and recharge the groundwater supply.

SECTION III. OPEN SPACE FOR OUTDOOR RECREATION

A. OPEN SPACES FOR OUTDOOR RECREATION OF RESIDENTS, 1973

Discussion The City's recreational activities in 1973 are water-oriented owing to the direct relation to the Sacramento River and Delta. There are many public land-related recreational facilities located within the City limits to serve the Citizens. Private parks include the Marina Park and the Blackwelder Park.

The existing Open Space lands in the City of Rio Vista and immediate surrounding for 3270 residents are shown in the following list and are illustrated on the map "Open Space Lands, 1973".

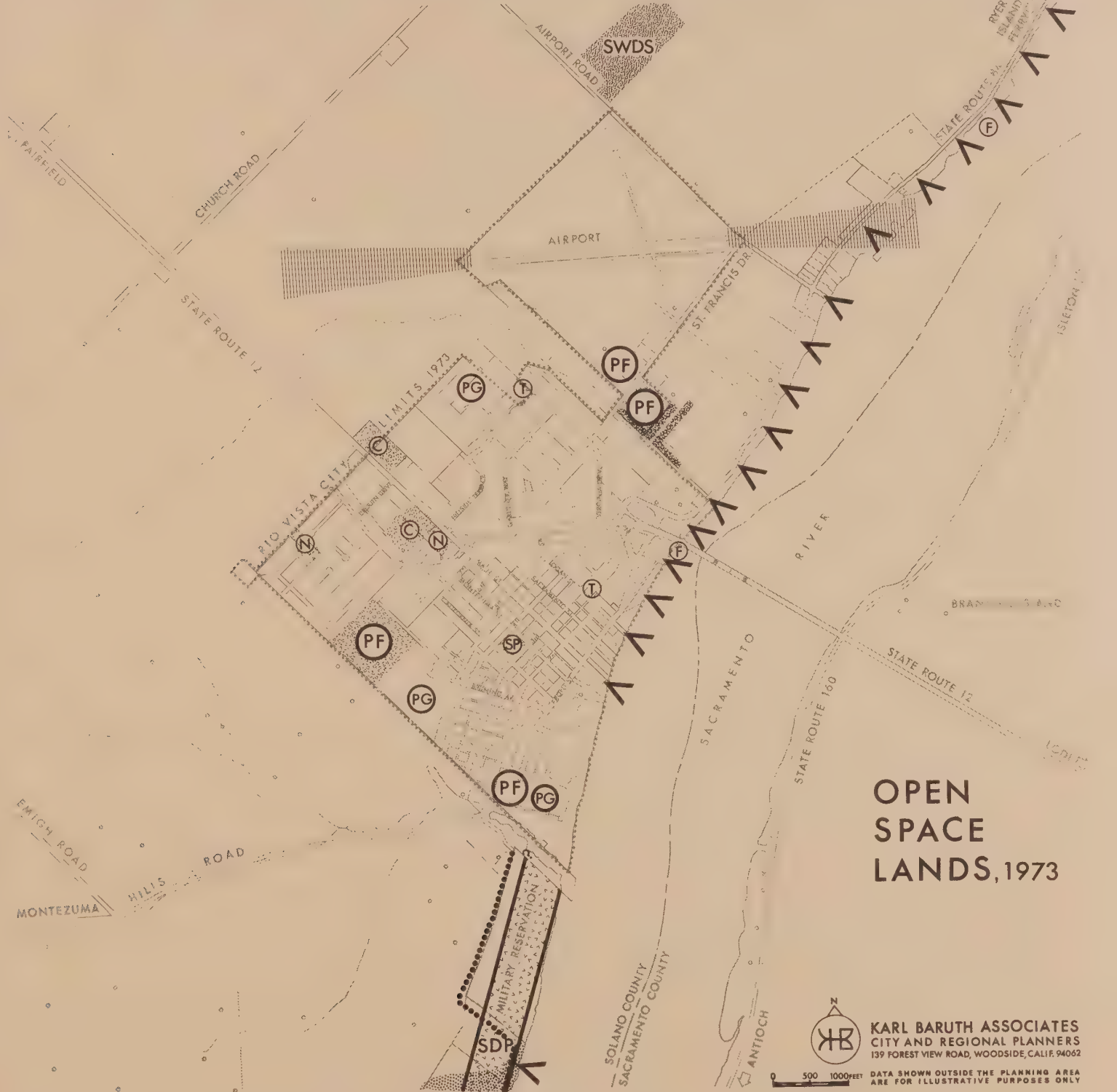
Classification	Location
Tot Lot " "	Logan Street & 3rd Street; Adjacent to White School;
Neighborhood Park " "	Drouin Drive; Accessible from Sierra Avenue, next to Cemetery;
School Playground (Elementary)	White School (K-4); Riverview School (5-8);
School Playing Field	Rio Vista High School;
Municipal Baseball Park (Egbert Field)	St. Francis Drive;
Municipal Swimming Pool	3rd and 4th Street.

Goal is: To provide park and recreation areas which are not yet in existence for the need of all age and interest groups.

Policies are: The City's Recreation Commission should discuss the following wishes of the Citizens' Committee on Rio Vista Recreation and Work through the City Council for the realization of the projects.

A major need of Rio Vista is a public or private Recreation Center open for Citizens of all ages that could be open every night. It should have ping pong, pool, study areas, dance area and T. V. It could be used by senior citizen groups during day-time hours. The goal would be to have a permanent recreation director to run the center plus all the other activities that could and should be developed in Rio Vista.

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OPEN
SPACE
LANDS, 1973



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NATURAL AND HUMAN RESOURCES PRESERVATION

- ▲ VISUAL AMENITY (RIVER VIEW)
- ▨ ROWS OF TALL TREES (SILHOUETTE)

HEALTH, WELFARE, AND WELL-BEING

- SDP SEWAGE DISPOSAL PLANT
- SWD SOLID WASTE DISPOSAL SITE

OUTDOOR RECREATION

- LAND:
- T TOT LOT
- N NEIGHBORHOOD PARK
- PG SCHOOL PLAYGROUND
- PF PLAYING FIELD
- SP SWIMMING POOL IN CITY PARK

- TRAIL
- CEMETERY

WATER:

- ▨ BEACH (SPOIL DEPOSIT) "GOVERNMENT BEACH"
- FISHING ACCESS

PUBLIC SAFETY

- ▨ AIRPORT CLEAR ZONE
- ▨ FAULT AREA (UNDER REVIEW)

Other needs of Rio Vista include lighted tennis courts, bike trails, a developed water-skiing area, and a fishing pier.

The Rio Vista Baseball Association plans to develop an area for a little league ball park which will make the present baseball park available for more use by other groups. At the present time it is used almost daily from May through July for Little League, Babe Ruth, Lob Hall and Sr. Babe Ruth. The women's softball league has to wait until the middle of July to start league play. The Baseball Association could include more participants if more space were available. We feel the most desirable plan would be to include the new Little League Baseball Field in a large park complex.

Land behind the White School was set aside for future baseball park area.

"Government Beack" to be developed for recreational use.

B. FUTURE RECREATIONAL REQUIREMENTS

Discussion The growth of the immediate urban area of Rio Vista is expected to reach about 9000 residents by around 1990.

Two distinct urban growth areas to the northwest of the City are recommended, each for about 3000 residents in rounded-off figures.

Goals are: To preserve areas of environmental features and recreational assets for human enjoyment and economic advantage. (Waterfront and natural sloughs).

To provide in each residential area the open-spaces according to the standards of open spaces recommended below.

To plan and use jointly school recreational facilities also for citizens of non-school age.

To concentrate the location of new recreational and educational sites along the two natural sloughs, northeast of the City, and the connecting open space link.

To encourage the development of new recreational opportunities along the riverfront like motels, fishing piers, marina, boat launch and other facilities and enhance the riverfront appearance, including apartments.

To identify riverfrontage areas for development and work towards a concerted effort between City - landowner - developer - financier - and public agencies financing recreational development.

To connect the new "land" open-spaces with the "water" open-spaces into one overall open-space system.

Policies are: Integration of areas of environmental features and recreational assets into an overall open-space system.

Updating of the subdivision ordinance in relation to open-space conditions of new residential areas.

Agreement should be reached by the River Delta School District and the City of Rio Vista to make joint arrangements for development and maintenance of existing and proposed publicly owned recreation facilities and school plant.

A corporation should be formed to buy the waterfront property on Front Street from Main Street to the bridge and existing businesses should relocate. This whole area should be open and be made attractive to people coming into town (e. g. tourists) with Sausalito type operation: Restaurants, shops, art gallery, apartments, etc.

The natural slough parks and the Sacramento River front should be connected by open space "links", providing hiking, riding and bicycling trails.

Along Front Street special "waterfront walks" for tourists and residents should be provided.

C. OPEN SPACE STANDARDS

"Standards" are the current tool to measure adequacy and quality in planning for open space lands. The following standards should not be identified as optimum solutions, but as "minimum standards" and will serve to assure the future open space lands requirements.

Since the lands for the about 6000 new residents are now within the Solano County administration, the requirements for parks and recreation as described in the County Ordinance 767 of July 24, 1971, are printed in the following.

The list gives the park and recreation and other public facilities acreages for new subdivisions at a density of 3 - 6.9 dwelling units per acre (3.4 persons per unit).

Area Population	Neighborhood			Community
	Playground Area (Acres)	Park Area	Playfield Area	Park Area
3000	5	15	6	12.5

D. AREAS OF OUTSTANDING SCENIC, HISTORIC AND CULTURAL VALUES

Discussion The area of greatest value is the Sacramento River, a part of the Sacramento - San Joaquin Delta. The Delta area is and has been the subject of study of many agencies on federal, state and multi-county level. The State's "Delta Master Recreation Plan" (June 1966) is in constant process of being updated, the last state's report has been issued February 1973. The regional effort by the 5 County Group, the "Inter-County Planning and Recreation Advisory Committee" issued their report on November 18, 1971. The Group is now reconstituted officially as the "Delta Advisory Planning Council". It is this Committee that will be coordinating the different planning efforts within the Delta Region.

Goal is: To preserve the scenic quality of the Sacramento River as a most valuable element of the natural landscape and as an important scenic resource.

Policy is: Preservation of the Sacramento River landscape should be achieved by compatible land use in order to provide scenic enjoyment.

E. AREAS PARTICULARLY SUITED FOR PARK AND RECREATION PURPOSES, INCLUDING ACCESS TO LAKESHORES, BEACHES, AND RIVERS AND STREAMS

1. Areas for Park and Recreation

Discussion Areas particularly suited for park and recreation purposes are divided here for two user groups: the residents and the visitors. Residents are nearly all related to the Rio Vista immediate urban area which is part of the city's plan for 9000 residents by about 1990.

The other group, the visitors, are now using some of the water-oriented recreation areas along the Sacramento River and sloughs or come for waterfowl hunting.

Areas particularly suited for park and recreation purposes for visitors include the Sacramento River, especially the about 1 1/2 miles long so-called "Government Beach". Also sloughs and their water surfaces provide a variety of recreational possibilities like swimming, water-skiing, boat-picknicking, fishing, mooring, sunbathing, camping and other uses.

The other visitors' attraction in the Planning Area is related to waterfowl hunting. One of the State's major waterfowl areas - the Suisun Marsh - borders the Planning Area and to the north of Rio Vista is an important habitat for waterfowl and water-associated wildlife.

CITY OF RIO VISTA PLANNING AREA * CALIFORNIA

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CITY OF RIO VISTA AND SOLANO COUNTY PLANNING COMMISSIONS



WATERFRONT DEVELOPMENT 1973

SEE ALSO MAPS:
LAND USE, ZONING, CONSERVATION,
OPEN SPACE LANDS, SCENIC HIGHWAYS



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Goal is: To provide park and recreation areas for 9000 residents in the immediate urban area of Rio Vista and for 585,000 recreation days by visitors in 1990.

Policy is: Provision of park and recreation areas needed for the existing and future residents for their health and well-being and areas to develop the water-related recreation potential for the recreation industry. The Yolo Bypass area and Ryer Island area to be developed as a recreation center for waterfowl and water-associated wildlife.

2. Access to Beaches, Rivers and Sloughs

Discussion The principal recreation resource, apart from boating or hunting is the fishery. Enjoyment by the residents and visitors of the Sacramento River can only be achieved to the degree that public access is provided.

Goal is: To acquire additional access rights to the River for the ever increasing flow of fish and wildlife-oriented recreationists.

Policies are: The public road system should provide access and parking facilities at selected recreation locations of the River frontage for boating, fish and wildlife oriented and other recreational activities.

The undeveloped lands, adjacent to the river, between Ryer Island Ferry and the Olympic Dredging Company land and other public lands along the river be developed for fishing access under the State's Department of Fish and Game for daytime use.

All public lands along the Sacramento River, North and South of Rio Vista, be in the immediate future developed for recreation with County and State and if possible Federal funds. Recreation to be composed of water oriented recreation, and camping and picnicking. The recreation areas in the Northwest area of Rio Vista be developed by private enterprise as is now being done. Joint use of trails by recreationists along the Sacramento Waterfront and deep-water channel access by industry is recommended.

Spoil from dredging operations be deposited in areas where its use could be coordinated with City and County recreation plans.

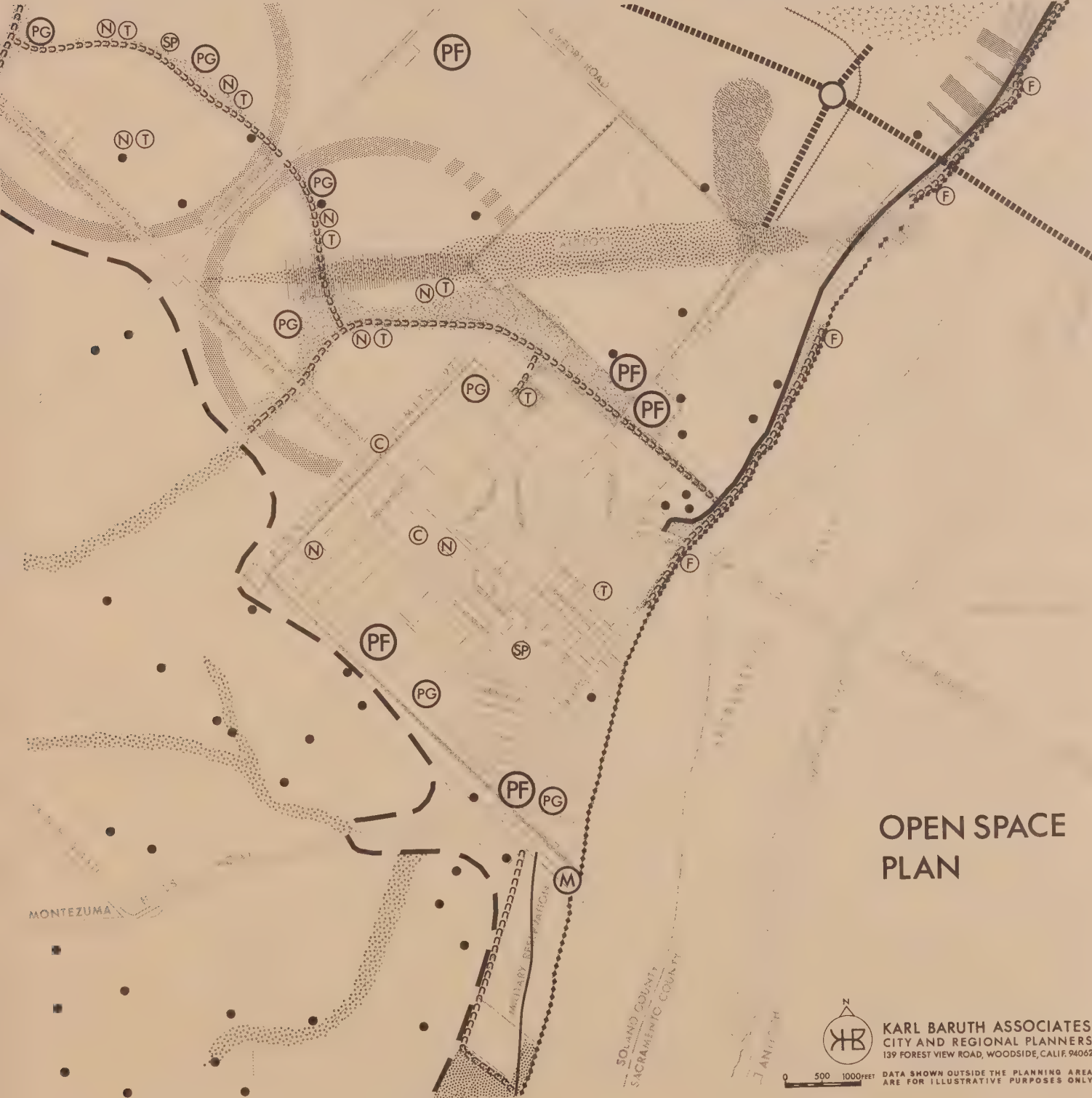
SECTION IV. OPEN SPACE FOR PUBLIC HEALTH AND SAFETY

The major category of direct hazard to life and property is Geological Hazard. This subject is discussed in Chapter 20 of this report.

CITY OF RIO VISTA PLANNING AREA * CALIFORNIA

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OPEN SPACE PLAN



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0 500 1000 FEET

DATA SHOWN OUTSIDE THE PLANNING AREA ARE FOR ILLUSTRATIVE PURPOSES ONLY

DIAGRAMMATIC OUTLINE OF OPEN SPACES FOR:

PRESERVATION OF NATURAL RESOURCES

..... FISH AND WILDLIFE AT SACRAMENTO RIVER BANKS

MANAGED PRODUCTION OF RESOURCES

- EXCELLENT AGRICULTURAL SOIL
- GENERAL BOUNDARY OF RANGE LANDS
- GAS WELLS
- SAND
- NATURAL DRAIN (GROUNDWATER RECHARGE)

OUTDOOR RECREATION

- (T) TOT LOT
- (N) NEIGHBORHOOD PARK
- (PG) SCHOOL PLAYGROUND
- (PF) SCHOOL PLAY FIELD & BASEBALL PARK
- (SP) SWIMMING POOL
- RIDING, HIKING & BICYCLING TRAILS
- (F) FISHING ACCESS
- "GOVERNMENT BEACH"
- SCENIC HIGHWAY
- SLOUGH PARK

PUBLIC HEALTH AND SAFETY

- (C) CEMETERY
- FAULT (UNDER REVIEW)
- FLOOD PLAIN HAZARD AREAS
- AIRPORT HAZARD ZONE
- AIRPORT NOISE AREA (ESTIMATE)

- (M) MARINA
- RIO VISTA'S URBAN GROWTH
- NEW HIGHWAY 12
- RAILROAD

SECTION V. EFFECTUATION

A. Highest priority has the immediate joint action by City and County to assure accessibility and use of areas at the "GOVERNMENT BEACH".

B. MANDATORY DEDICATION OF OPEN SPACE

Rio Vista's Subdivision Ordinance, Section 16.2 "Recreation Requirements" is now five years old and is in need to be updated. The County Ordinance No. 767 July 24, 1971 is recommended to be used as a model ordinance. A copy of the Ordinance is deposited in the City Administrator's Office, Rio Vista.

Before subdivision maps are being submitted, a rough general sketch of each of the two new neighborhoods are to be submitted showing the overall development in general terms and stages of development.

Subdivision maps are to be submitted only for those areas which are to be developed at that time period.

C. SACRAMENTO RIVER Frontage between Bridge and Main Street Area

The replanned area shall include the following broad use classifications:

General Commercial	Waterfront Park with Waterfront
Tourist Commercial (shopping goods)	Pedestrian Walk
Motels	Fishing Access
Eating and Drinking	Pier
Apartments	Others.

Such a diversification and mixing of uses is permitted in the City under the "Planned Development District".

D. AIRPORT ZONING

Under the California Law (21675 Public-Utility Code) the "Solano County Airport Land Use Committee" shall formulate a comprehensive land use plan that will provide for the orderly growth of each public airport and the area surrounding the airport within the jurisdiction of the Committee. The planning boundaries shall be established by the committee after hearing and consultation with the agencies involved.

No comprehensive land use plan has yet been prepared by the committee. At the committee's July 28th, 1972 meeting, members present stated that the Rio Vista Municipal Airport did not present any noise problem at present.

Action should be taken by the City to initiate the preparation of a plan of the area surrounding the airport.

E. OTHER

Implementation of lower priority include all those policies as expressed in this element.

F. REVIEW

A 3-year review interval is recommended.

PART II. CHAPTER 20. SEISMIC SAFETY ELEMENT

A. POLICY STATEMENT

Discussion In the City of Rio Vista no public or private losses occurred because of earthquakes, landslides, flooding or other geologic locally related events, although these hazards have reached a high level in certain other parts of California, including the Bay Area. Seismic risk is composed of three factors:

1. The naturally occurring seismic event;
2. The response of a particular man-made structure to that event;
3. Human exposure to the combination of the first two factors.

Item 1. The subject is discussed in Section D of this Report.

" 2. This component need not consider one - and two-family dwellings nor farm buildings.

" 3. This component is based on the time average of the number of persons exposed to the hazard. Occupancy or utilization of certain structures may vary widely according to time of day (day school - evening school, hospital, hotels, motels, apartments, etc.), day of week (Sunday: Church , theater, teenage center, etc.) or season.

Goal is: To reduce the risk of death, injury and property damage due to a major earthquake.

Policies are: If by December 31, 1973, the State Geologist delineates "earthquake hazard zones" in the City of Rio Vista for review and comment, earthquake-resistant design should be required for all structures designed for human occupancy. (In addition to the "Uniform Building Code" regulations).

Programs for building with major structural deficiencies - if they exist - prone to collapse in an earthquake should be effectively pursued and regulations be adopted which should minimize the hazards:

Existing buildings of high-occupancy load, such as schools and places of public assembly, should be vacated as soon as possible, if they can be proven to be seismic hazards , cannot be rehabilitated, and are therefore deemed a public nuisance.

The City of Rio Vista will add amendments in their zoning, grading and subdivision ordinances and building code to provide for the further reduction of earthquake hazards.

A plan for earthquake disaster relief will be formulated and periodically reviewed for maximum effectiveness.

The above goals and policies should be adopted by the City's Planning Commission and City Council.

Note: Your consultant did not intentionally or carelessly omit evidence and cannot be held liable for any damage due to seismic movements.

This seismic element is for general planning purposes only. A lot by lot analysis may show different results based on specific data in earthquake or slide prone areas.

B. CONTINGENCY PLAN

Communities should have contingency plans which specifically include earthquakes. This subject is part of the "Safety Element" in Chapter 23 of this report.

C. CONSIDERATION OF EXISTING STRUCTURAL HAZARDS

The objective of this component is to provide for the orderly abatement of structural hazards within the community.

The slightly greater part of the dwellings within the City limits of Rio Vista has been constructed during the last 25 years (east of Logan Street and Highway 12, north of Joseph Street to Drouin Drive). Therefore the greater part of the City's building stock is relatively new and most buildings - also in the Planning Area - have been constructed in conformance with the Uniform Building Code.

Historically wood-frame, single-story, residential structures are relatively earthquake resistant when not constructed over a fault trace. Less than 5% of the approximately 300,000 wood frame dwelling units in the San Fernando Valley were in the heaviest shaken area at the 1971 earthquake. 75% of the wood frame dwellings had a 5% loss or less. One-story buildings performed better than 2-story buildings.

Structures which may have structural deficiencies - as far as earthquakes are concerned - are some of the older buildings in the older parts of the town (Main Street areas) and those which have walls constructed of unreinforced masonry, unstable parapets, cornices or appendages, creating a hazard to occupants and passers-by.

No critical and high occupancy buildings and structures exist in the Planning Area. Exceptions are the structures in the City of Rio Vista being critical for disaster recovery (fire and police station, P.G. & E. complex, Highway 12 bridge over the railroad at the railroad museum), structures involving involuntary occupancy (High School, 2 Elementary Schools & School Administration Building).

D. IDENTIFICATION, DELINEATION AND EVALUATION OF NATURAL SEISMIC HAZARDS

The level of seismic hazard is dependent upon both geological conditions and the extent and type of land use. This section concerns itself with a definition of geological conditions contributing to seismic risk in the Rio Vista area.

Since SB 520 (Geologic Hazard Zones Act) was signed by the Governor early December 1972, there exists an effective ability to insure that citizens will not be subjected to risk of tremendous seismic accident because government failed to prevent gross abuses in land use.

Pursuant to Chapter 7.5 section 2621.5 the State Geologist shall compile maps, delineating the special study zones and shall submit such maps to all affected cities, counties, and state agencies, not later than December 31, 1973, for review and comment.

1. Earthquake Intensities

Earthquake intensities are measured by intensity scales. According to the records no earthquake originating in the Rio Vista area was greater than intensity IV. The 1892 Vacaville - Winters earthquake produced ground shaking of VI plus intensity in the Planning Area, as did the 1906 San Francisco calamity.

Earthquake damage and casualties can be caused - amongst others - by ruptures from faulting, ground shaking, ground failures, or ground displacement. The available data have been collected by your consultant and are illustrated on the accompanying map for the City of Rio Vista. The subject is discussed in the following sections.

2. Fault Displacement

In response to the accumulation of stress in the rocks, earth materials have been moved relative to one another. Most of the faults in the San Francisco Bay area are extinct or long dormant, though sometimes "active".

Within the Southeastern Solano County Planning Area and the City of Rio Vista are now three recorded fault zones. To the City's south is the recently described Rio Vista fault, north of the City passes the Midland Fault zone and along the western boundary of the Planning Area criss-crosses an unnamed fault zone the earth.

The Rio Vista fault is covered by spoil and the Midland fault is concealed so that no surface ruptures along faults are visible.

The following discussions may help to determine the significance of the faults to the City of Rio Vista and the Planning Area's people and property, as well as land-use.

a. Rio Vista Fault

A recent progress report on the subject described a fault just south of the City of Rio Vista, as illustrated on the report map, from the Riverview School area south for about 2 1/2 miles length. The "Rio Vista" fault break has been verified in the field. No evidence of historic surface faulting (including tectonic creep), nor that the fault is the locus of historic damaging earthquake, nor that the fault is currently seismically active is known. The basic information in relation to the Rio Vista fault scarp appeared 1950 and states that the

"height of the scarp before emplacement of the dredged fill was about 100 feet. Remnants of a bench 40 feet below its brow suggests two-stage uplift. Records do not suggest displacement during historic times. The Rio Vista fault is possibly an incident in the continuing rise of the Rio Vista gas field dome".

The "Sacramento Sheet" of the State Division of Mines and Geology" does not show the Rio Vista fault.

Although evidence is not known that the Rio Vista fault is the locus of damaging earthquakes, several shocks have been recorded in Rio Vista from the Antioch - Collinsville Quake on May 19, 1889 on August 12, 1906, 6:00 A.M. with no damage reported (the year of the San Francisco calamity) and on October 22 and 23, 1916 in relation to a Contra Costa, San Joaquin, Alameda, Santa Clara County shock, and others mentioned in Section 1. before.

This is what we now know based on existing information as published. There still remain unanswered questions which have been touched upon during a conversation your consultant had with Douglas H. Hamilton, Engineering Geologist, Earth Sciences Associates, Palo Alto, on January 3, 1973, in his Office. Are the test drill holes prepared for the Rio Vista fault deep enough for clear evidence of a fault? Has the number of test holes been sufficient? Where is the extension of the fault?

Could the steep bluff facing for 2 1/2 miles the Sacramento River - now assumed to be a fault scarp - have been formed by marine erosion of a once wider Sacramento River? It is recommended that the first money to be spent after the February 27, 1973 school bond decision is for still unanswered questions relative to the steep bluff, south of Riverside School. This is also the requirement of the SB 689 (Geological and engineering investigations of school sites.)

An air photo taken 1949 - before most of the spoil had been deposited - has been located in an 'historic' air photo collection in Southern California and has been handed over in January 1973 to the USGS Office in Menlo Park for additional studies of the Rio Vista fault.

3. Earthquake Epicenters

The latest compilation (July 1972) of earthquake epicenters in California does not show any evidence in the Rio Vista area. A 1963 report which is based on U. S. C. & G. S. listings of epicenters between 1928 - 1958 shows no epicenters in the Rio Vista area. In 1968 a report on Bay Area Earthquakes illustrates seven epicenters in different locations within the Planning Area, including one epicenter at the Rio Vista Fault area. The seven epicenters have an intensity of shocks of 4 or less, and are based on earlier data stating that they are "centers of shocks only strong enough to rattle windows and doors; most of these shocks were not even reported felt by anyone".

4. Ground Shaking

Probably the most difficult task today, in terms of the predictive capability of the geologist and seismologist, is devising a reasonably reliable method of predicting "ground shaking". Although broad generalizations may answer some questions, a wide variety of factors (apart from soils) may contribute significantly to damage potential, like magnitude, distance, frequency and duration of a particular spot or point in the City of Rio Vista is subject to a great variety of conditions. As of today (July 1973) we cannot predict when, where, or how great the next earthquake will be, although the "state-of-the-art" is advancing rapidly.

5. Ground Failure

This component deals with the stability of slopes under seismic conditions to determine the potential for seismically - triggered landslides.

Ground failure occurs when stresses in the ground exceed resistance of earth materials to deformation or rupture. Instability comes about when stresses are increased by natural or man-made causes, such as earthquakes, artificial fills, groundwater or gas withdrawal like in the Rio Vista area, peat oxidation subsidence or others.

a. Soils

The general dominant soil association on which Rio Vista stands is Altamont - Diablo, 2-9% slopes and the Montezuma Hills Altamont - Diablo, 9-30% slopes. This information is for general planning purposes only and is based on a soil depth of five feet or less than five feet where bedrock is encountered at a lesser depth, all for non-farm interpretation. Detailed soil surveys must be made for operational planning.

(1) Erosion

Erosion is the process in which soil or soil-like material is re-

moved from one area and transported to other areas largely by means of moving water. If water moves over a level area, little physical damage usually occurs to structures due to removal of material. However, if the flow of water is concentrated, the velocity increases and deep gullies may result which could in time encroach upon, and damage structures. One of the results of all the types of erosion activity can cause damage and expenses by undermining structures, depositing silt, sand, or mud in low areas such as roads, basements, tunnels, and water front areas, like Rio Vista.

Engineering geology investigations should be part of each development application within Rio Vista areas deemed to be or being potentially hazardous.

(2) Expansive Soil

A soil is called expansive if it has the property of swelling when it absorbs moisture; when the soil dries again, in daily or seasonal cycle, it shrinks. The degree of volume change depends both on the quantity of moisture change and on the amount and kind of clay in the soil. In the present state map of 'Expansive Soil' the Planning Area is generally designated as 'high' rating.

Since expansive soils are easily detected and structural engineering solutions are relatively easily usable, they are not considered a "risk" problem.

b. Gas Withdrawal Subsidence

A relatively small amount of subsidence has been documented in the area of Rio Vista Gas field in the eastern portion of the Planning Area. It is not known whether this subsidence is the result of gas withdrawal, groundwater withdrawal, peat compaction, or natural geologic processes. If this subsidence is wholly or in part the result of gas withdrawal, its relatively small magnitude and rate should not present a problem during the remaining productive life of the field.

6. Flooding

Prior to flood control work the Rio Vista area was subject to periodic inundation by flood flows from the Sacramento River and its tributaries. Prior to 1850 some low levees were constructed by individual landowners. Just before Christmas 1861 the settlement of Rio Vista was flooded out and moved to the new site. Towards the end of last century there were many miles of levees along the river and along adjacent stream channels. However, as additional levees were constructed, high water levels were raised and other areas became subject to flooding due to increased flood heights.

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CITY OF RIO VISTA AND SOLANO COUNTY PLANNING COMMISSIONS



SEISMIC SAFETY

BASED ON INFORMATION
FROM U.S. GEOLOGICAL
SURVEY

THIS MAP IS FOR GENERAL PLANNING
PURPOSES ONLY

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DATA SHOWN OUTSIDE THE PLANNING AREA
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GENERAL LOCATION OF:

- RIO VISTA FAULT (UPPERMOST PART OF THE SCARP AT THE JUNCTURE WITH THE DREDGED 40-55 FEET FILL)
 - AREA WITHIN WHICH RIO VISTA FAULT MAY BE LOCATED (DREDGING DEPOSITS OBSCURE POSITION AFTER 1949)
 - YET UNIDENTIFIED LINE IN AIRFOTO (FAULT ?) TAKEN IN 1949
- } UNDER REVIEW

A number of plans were considered for flood prevention along the Sacramento River and its tributaries and the leveed bypass concept was adopted and is the basis for the existing Sacramento River Flood Control Project. The project provides a high degree of flood protection to the area near Rio Vista. The project at this location has a flow capacity of 579,000 cubic feet per second at a water surface elevation of about 9.5 feet U. S. Geological Survey datum. The mean higher high water tide level in the Rio Vista area was considered in establishing this elevation. Liberty Island, a tidal tract in the Yolo Bypass, is subject to flooding with an average frequency of about once every 2 years. This flooding generally could occur anytime during the November through April period. Break in the levees would inundate the area just northeast to the City of Rio Vista, where flood control levees have been built for protection. At that area State Route 84 is assumed to be constructed low enough to allow the flood water - if any - to drain into the river. The area is now used and zoned agriculturally and no change is recommended.

Since 1945 certain functions are assigned to the State's Reclamation Board relative to construction activities on flood control works outside the boundaries of the Sacramento and San Joaquin Drainage District.

Since the threat of flooding is an important consideration in the safety of the community, the stability of the perimeter levee system which protects Rio Vista should be regularly checked by the local levee maintenance districts, the State Reclamation Board and the U. S. Corps of Engineers.

E. SEISMIC DETERMINANTS OF LAND USE POLICY - EFFECTUATION

This component is concerned with reducing seismic risk to future development and as such will be highly significant to the total community, particularly in the long run.

Since the now available data of the Rio Vista fault are insufficient to determine the geological engineering characteristics of the land forms, the margin for accuracy is probably wide. However, the general guidelines expressed in this section may serve as a framework for planning tools to administer planning and development regulations.

Guidelines are important to be followed because the Planning Area - although not having been the locus of a major earthquake - is and has been affected by major outside earthquakes (1889, 1892, 1906, 1916). In addition to State's "Urban Geology" Master Plan includes the Planning Area for probable shaking maximum intensity of between VII and VIII rating.

The State Geologist will present "special study zones" by December 31, 1973 for review and comment to the affected Cities and Counties according to the new Geologic Hazard Zones Act. At that time more accurate and detailed information will be available.

In view of the variations in geologic and soil conditions - and many unknowns - which represent varying degrees of risk, it is neither feasible nor is it the purpose of this General Plan program to prescribe specific investigations, designs or procedures which would be appropriate. With the above severe limitations in mind, the following general recommendations are presented.

1. Existing Regulation (July 1973)

- a. City of Rio Vista

- (1) City General Plan

The 1957 adopted General Plan does not mention earthquakes or other seismic hazards in relation to land use or zoning.

- (2) Codes

No specific requirements are prescribed in the Zoning Ordinance of the City (No. 274) nor in the Subdivision Ordinance (No. 267) in relation to earthquakes hazards.

Building and grading permits are issued now by the City according to applicable conditions as defined in the Uniform Building Code, published by the International Council of Building Officials. The City has no specific grading code.

The Rio Vista area is within Zone III classification (greatest seismic hazard) of the UBC. The City uses volume IV (1970 edition) of the UBC for dangerous buildings.

2. Recommendations

The purpose of the recommendations is to reduce seismic risks in the future. This should be achieved without additional administrative or bureaucratic complications with the use of existing laws.

Since the State is rating a probable shaking maximum intensity of between VII and VIII in the Planning Area precautions should be taken to help protect the citizens' lives and properties.

What can be done to limit the damage of an earthquake? The City should undertake a program (in cooperation with the State Geologist) to assist in the identification of the Rio Vista fault zone.

- a. Seismic hazard control

Earthquake damage can be controlled by restricting land use and by improved building design.

(1) Restricting land use

Land use should be controlled in high seismic hazard areas or "risk areas" such as a fault corridor, areas of possible landsliding and areas where soil conditions amplify and prolong ground motion. The need for a Rio Vista fault corridor would have to be established first by the State Geologist under the new Geologic Hazard Zones Act.

The proposed land use for the Rio Vista Area is planned for urban expansion. No land use restrictions are recommended now in the General Plan in relation to seismic hazards, although more detailed planning in the future and additional information may make changes necessary.

(2) Buildings

Hazardous existing buildings are critical to a lessening of potential loss of life and property during major earthquakes. Because of the potential economic impact, hazardous building abatement regulations might best be imposed gradually on a priority basis, first those structures that are the most dangerous and with the highest occupancies.

Chapter 70 of the Uniform Building Code shall apply, as described in Chapter 10 under 2. Recommendations.

(3) Utilities

Sewer plant and especially wells do represent a hazard during an earthquake and may disrupt services.

b. Zoning regulations

Only after the State Geologist will decide by December 31, 1973, according to the new "Geologic Hazard Zones Act" that there is a "special study zone" within the Rio Vista Area and only after the review by the local authority occurs, such a designation of certain lands may lead to "Fault Hazard Zoning".

If the Rio Vista fault would be designated, the key recommendation would be to "control or restrict construction". Permits should be issued only after geological reports justify construction.

In the guidelines for the preparation of a "Seismic Safety Element" (Draft) by the State's Joint Committee on Seismic Safety it is stated that any development to be considered within, or immediately adjacent to, an active fault zone should be predicated upon a requirement for geologic studies to demonstrate that the proposed construction would conform to community policy and that an undue hazard to life and property would not ensue.

c. Subdivision Regulations

Real estate subdivisions in Rio Vista's urban growth area are expected to be built also in the future at a low density and to consist of predominantly single-story residential structures.

With the new public awareness of seismic hazards, soil and geological reports should be required to be submitted with the construction plans for any subdivision in the City of Rio Vista's growth area.

Since Rio Vista's urban growth area is not level, the developer shall submit as part of the improvement plans for any subdivision a grading plan meeting all requirements of the Uniform Building Code and including the following data:

- Existing and proposed contours at intervals as specified by the City,
- Slope ratios for heavy grading,
- The approximate location for slope control areas, incl. easements,
- Storm drainage system incl. easements,
- Retaining walls,
- Cross sections of critical slope areas,
- Boundary of subdivision, lots, streets, etc.

d. Grading Regulations

Strict regulations in relation to excavations and fills shall apply to all new operations. Building permits to be connected with a grading permit if excavations on a building site exceed 300 cubic yards or involve a cut or a fill in excess of four feet. Slopes for cuts and fills for building construction be no steeper than 2:1.

e. Continued review and revision of the Seismic Element

Since more information will be forthcoming through the State's Geologist's Office and since continuously additional information on theories of earthquake prediction and techniques in construction are devised it is essential that the City periodically review and update the information in relation to the earthquake risk situation. This should be done every three years or earlier, if significant information becomes available. The first review will be related to the State's Geologist's survey to be submitted to affected Cities by December 31, 1973.

PART II. CHAPTER 21. NOISE ELEMENT

A. THE NOISE NUISANCE

1. Noise is unwanted sound. A list of noise sources includes:

Transportation*:

Rail,

Trucks,

Automobiles,

Aircraft.

Industrial Noise:

Natural gas pump.

Construction Noise, Garbage truck compactor, Garbage metal cans,

Heating, Ventilating and Air-Conditioning Noise,

Non-Environmental Interaction Noise.

Concern over noise is not new - the frightening sounds of Jericho are a well known story. In ancient Rome a decree was passed forbidding chariots to rumble the streets at night.

With automobiles, trucks and airplanes in ever increasing use, noise has now become a worldwide problem to the citizens of this planet. There is a new global awareness of environmental problems and their vital importance to man's life. In the United States the "Noise Pollution Control Act" has been adopted in the final hours of the 92nd Congress, December 1972. "The Congress declares that it is the policy of the United States to promote an environment for all Americans free from noise that jeopardizes their health or welfare." The Act's main provisions are:

The Environmental Protection Agency was given broad authority to establish noise levels for new motors and engines and for transportation, construction and electrical equipment.

The EPA will be required to conduct an extensive study of noise standards for aircraft, and submit proposals.

Federal rules will override State and municipal noise laws, with this exception: Power to regulate use of particular products will remain in local hands.

The federal concern is also expressed in the ever increasing official research publications on noise. The U. S. Council on Environmental Quality is actively studying noise control efforts. The U. S. Department of Housing and Urban Development issued noise standards termed: Acceptable, discretionary, and unacceptable.

* Requirement of the "Noise Element" of the General Plan.

One approach is to base noise criteria on what most people would tolerate to have in the way of a noise environment and will "accept" without undue complaint.

TABLE 21-1 "ACCEPTABLE" NOISE LEVELS

Location	Assumption of what people would tolerate		Assumption of what people would accept without undue complaint	
	Noise Level dB(A) Day-10 pm. Night		Noise Level dB(A) Day-10 pm. Night	
Rural Residential	35	25	35 - 45	25 - 35
Suburban Residential	40	30	40 - 50	30 - 40
Urban Residential	45	35	45 - 55	35 - 45
Commercial	55	45	55 - 65	45 - 55
Industrial	60	50	60 - 70	50 - 60

Source: "Noise Pollution", U. S. Senate Hearings, Wash. D. C. 1972, pp. 314, 315.

The above qualitative or subjective reactions by people to noise are just personal statements. People have lived with increasing noise for so long that many have lost any rational basis for judging what they might want if they had an appropriate base for judgment. Because of the variation in the way people react to noise, it is not possible to determine fixed noise limits "acceptable" to all people under all circumstances. The survey interprets the results of interviews held with people in areas with a specific loud noise, about 1/3 said that they tended to get used to the noise and about 1/4 said the noise became more bothersome with time.

B. CALIFORNIA'S RESPONSE TO NOISE

The Governor's Office recognizes that noise has many adverse effects on man. Part of the reason for the frustration of today's urban life can be placed in the high noise levels that act as subliminal irritants. It causes hearing loss, interrupts sleep, interferes with speech, hampers classroom activities and generally degrades the quality of life. Noise in general is a local problem and should be controlled at that level.

GOAL - It is the Goal of the State to reduce irritating and harmful effects of noise to the citizens of the State to insure acceptable environmental noise standards through effective planning and, if necessary, regulation.

To accomplish this Goal the following Policies are recommended:

POLICIES -It is the Policy of the State:

1. to provide within State Government a focal point for noise abatement and prevention, including:

- a. collecting and disseminating competent information on adverse effects of noise and of means for its control;
- b. developing, in cooperation with all units of government, model noise ordinances for urban, suburban and rural environments;
- c. providing assistance to Local Governments engaged in developing and implementing noise abatement procedures;
- d. developing criteria and guidelines for use in setting standards for human exposure to noise;
- e. developing noise emission standards for noise producing objects in use in California; and
- f. developing noise transmission standards for new buildings constructed in California and recommending building code provisions requiring compliance with these standards.

C. HIGHWAY NOISE

California's particular noise problem on roads stems from the about 12,5 million motor vehicles which use California highways. This vast vehicular armada includes about 700,000 motorcycles and about 70,000 diesel trucks. The State's Public Works Department believes that three concerted attacks are involved to reduce the freeway traffic noise:

Reduction of noise at the source - the motor vehicle;
 Adequate land-use zoning adjacent to highways by local government; and
 Proper highway design and location.

Nationwide highway noise levels compatible with different land uses are worked out by a "Noise Standards Advisory Committee" with a representative also from the State of California.

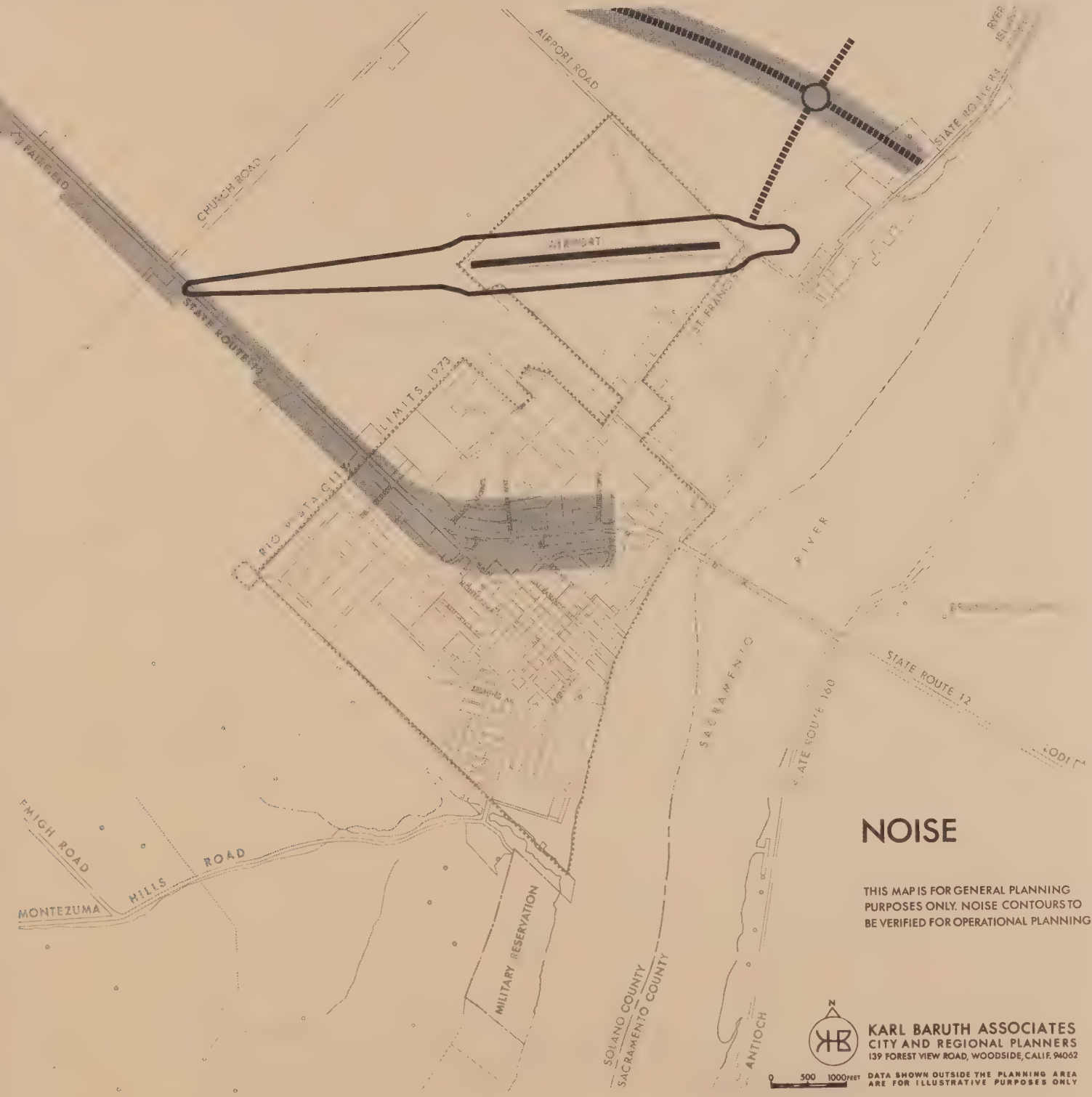
Highway sections meeting all of the following criteria and having no special noise producing characteristics would not normally exceed the design noise levels of Categories B, C, and D of the standards of Table 21-2.

1. Noise Prediction Method

More detailed methods have been issued by the U. S. Department of Transportation in PPM 90-2 of January 29, 1973. It is said that the noise levels to be used in applying the noise standards shall be obtained from a prediction method approved by FHWA. The noise prediction method contained in National Cooperative Highway Research Program Report 117 and the method contained in DOT Transportation Systems Center Report DOT-TSC-FHWA*-72-1 are approved as of January 29, 1973 for use in applying the noise standards. Other noise prediction methods or variations of the above should be furnished to FHWA Office of Environmental Policy together with supporting and validation information for approval.

* Federal Highway Administration.

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NOISE

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APPROXIMATE LOCATION OF 'NOISE EXPOSURE FORECAST' (NEF) 30 CONTOUR AROUND THE AIRPORT ACCORDING TO:

— BOLT, BERANEK & NEWMAN, 1971. (25 DAILY OPERATIONS, 1% JET) AND STATE DEPARTMENT OF AERONAUTICS: 65 dB ESTIMATED CONTOURS

— APPROXIMATE AREA INSIDE THE 'NORMALLY ACCEPTABLE' DISTANCE FROM STATE ROUTE 12 (HUD, 1971) WITHOUT NOISE REDUCERS, 1971
- - - - - ROUTE 12 BYPASS, 1990 ESTIMATE

The relationship of land use on highways and noise level from the federal memorandum 90-2 of January 29, 1973, is shown in Table 21-2.

TABLE 21-2 DESIGN NOISE LEVEL/LAND USE RELATIONSHIPS

Land Use Category	Design Noise Level	Description of Land Use Category
A	60 dBA (Exterior)	Tracts of lands in which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks, or open spaces which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	70 dBA (Exterior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, picnic areas, recreation areas, playgrounds, active sports areas, and parks.
C	75 dBA (Exterior)	Developed lands, properties or activities not included in categories A and B above.
D	55 dBA (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

Source: "PPM 90-2", U. S. Department of Transportation, Washington D. C. 1973.

The method of application for land use category D is shown in the following Section 2.

2. Noise Standards

Although State Highway Route 12 is planned to bypass Rio Vista in the future, building applications along the now existing route through the City may be processed and noise standards may have to be verified.

Noise reduction factors higher than those shown below may be used when field measurements of the structure in question indicate that a higher value is justified. In determining whether to use open or closed windows, the choice should be governed by the normal condition of the windows. That is, any building having year round air treatment should be treated as the closed window case. Buildings not having air conditioning in warm and hot climates and which have open windows a substantial amount of time should be treated as the open window case.

TABLE 21-3 NOISE STANDARDS

Building Type	Window Condition	Noise Reduction Due to Exterior of the Structure	Corresponding Highest Exterior Noise Level Which Would Achieve an Interior Design Noise Level of 55 dBA
All	Open	10 dBA	65 dBA
Light Frame	Ordinary Sash, Closed	20	75
	" " w. storm windows	25	80
Masonry	Single Glazed	25	80
Masonry	Double Glazed	35	90
<p>Exceptions</p> <p>The design noise levels set out in these standards represent the highest desirable noise level conditions. State highway departments shall endeavor to meet the design noise levels in planning, locating, and designing highway improvements. However, there may be sections of highway where it would be impracticable to apply noise abatement measures. This could occur where abatement measures would not be feasible or effective due to physical conditions, where the costs of abatement measures are high in relation to the benefits achieved or where the measures required to abate the noise condition conflict with other important values, such as desirable esthetic quality, important ecological conditions, highway safety, or air quality.</p>			

Source: "Policy and Procedure Memorandum 90-2", U. S. Department of Transportation, Federal Highway Administration, Washington D. C. , January 29, 1973, Attachment 2.

3. Zoning and Land Use

Highway 12 traverses now sparsely settled areas which are used and zoned for agricultural purposes. A bypass of Highway 12 is planned to the north of Rio Vista through lands which are used and zoned for exclusive agriculture, being outside of the 1973 City limits. This bypass will eliminate the heavy through-traffic noise now felt.

4. Noise Reducers

Highway noise can be reduced in sensitive locations by putting up noise barriers. A 12' high wall along the route may reduce noise by about 20% (from 80 dB to 65 dB), but may produce an unattractive appearance. Small artificial hills properly landscaped may provide a more attractive appearance, but that approach would need more right-of-way lands. Other barriers are buffer planting strips on easements along the highway.

D. AIRPORT NOISE

The noise contour around Rio Vista airport on the map is estimated according to the noise contour, as established by the State Department of Aeronautics. The exact location is to be established whenever the need arises by a monitoring device.

The Solano County Aviation Advisory Committee declared at their committee meeting of July 28, 1972 that "...the Rio Vista Municipal Airport did not present any noise problems at present and it was their opinion that monitoring the noise level at Rio Vista was not necessary".

It is obvious that "at present" there are no noise problems because the airport is surrounded mainly by wide open agricultural lands. There have been an estimated 15-20 average flights during 24 hours, with jet engines estimated to reach up to 1% of all flights during 1973.

Navigable approach and take-off easements should be given to the City of Rio Vista as a condition for any changes in zoning from the present compatible A-20 zone to any other zone, subject to compensation.

E. OTHER NOISE

Land use in the Rio Vista urban growth area should not be limited owing to the noise of some compressors at gas wells. The City of Rio Vista should require cloaking of the derrick of the respective gas well to protect future residents, if the growth occurs before the depletion of the gas field.

F. EFFECTUATION

The zoning ordinance is the appropriate instrument for noise control, because it can vary levels of permissible noise by zoning districts.

PART II. CHAPTER 22. SCENIC HIGHWAYS

A. SCENIC ROUTE

The State Scenic Highway program may have some advantages because the official designation with the Scenic Road Emblem may have some "promotional" values. This can also be achieved on the City's own initiative by drafting its own "Scenic Route Regulations" and designing its own "Scenic Route Emblem".

B. SUGGESTED ROADS IN SCENIC AREAS

One of the roads with a scenic setting in the Rio Vista area is State Route 84. From the existing Rio Vista Highway 12 Bridge the road follows the Sacramento River to the northeast with beautiful Delta scenery. Nearly all the lands between the proposed banks are not privately owned.

Only in the immediate vicinity of Rio Vista are a few smaller private lots adjacent to the northside of the proposed route through scenic areas with just a few buildings. The boundary of the scenic areas is the established building line and the other side of the Scenic area is at the Sacramento River bank. Much of the land towards the Ryer Island Ferry is adjoining State Reclamation lands and consist of large tracts of agricultural land. In this area the road is on the levees.

C. MINIMUM STANDARDS - EFFECTUATION

1. Policy Statement

Discussion The Joint Citizens' Committee on 'Parks and Recreation, Open Space Lands, Rio Vista Recreation, Tourism and Marina" discussed the questions of "Scenic Highways". Furthermore the Citizens' Committee on "Transportation, Airports, Noise, Scenic Highways" spent also some time on the discussion of scenic highways.

The first mentioned Citizens' Committee agreed on the following:

- | | |
|------------|---|
| Goal is: | To recognize that the Sacramento River and the existing and future roads, if any, along or near the banks are scenic in character and are traversing beautiful rural areas. |
| Policy is: | State Highway 84 from Rio Vista to the Ryer Island Ferry and on Ryer Island be designated and developed as a road in scenic areas, as shown on the map. |

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ROAD
THROUGH
SCENIC AREAS

PRELIMINARY
CORRIDOR SURVEY
FOR DETAILS SEE REPORT TEXT

VIEWS FROM THE ROAD:

- SHORT VIEWS
- LONG VIEWS OVER SACRAMENTO RIVER INTO THE VALLEY
- + MINOR LANDSCAPE NODE
- > VISTA POINT
- (R) ROADSIDE REST

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The Policy of the other Citizens' Committee is to:

Designate Highway 84 as a route in scenic areas as shown on the map and study the criteria established by the State in relation to such roads.

2. Specific Development Plan of the route in Scenic Areas, as shown on the map.

In the Rio Vista area the road passes through some commercially and industrially zoned and temporarily unclassified lands. In the future the industrial lands will continue with such use and newly developed lands are recommended to concentrate on residential use along the Sacramento Riverfront. Deep-water channel access by industry is recommended.

3. Sign or Billboard Ordinance

The scenic area sign ordinance is described in Part I, Chapter 12 and is applicable for Rio Vista. Specifics for the Rio Vista area are added in the following:

Sec. 1.3 On-Site Signs near Rio Vista in the commercial, industrial or temporarily unclassified zones.

On-site signs may be erected and maintained on property located along the commercial, industrial or temporarily unclassified scenic route subject to the regulations of this Section. Where the regulations of these zones are more restrictive than the regulations of this Article the regulations of the zone shall apply.

4. Land Use Regulation

The land use regulations are described in Part I, Chapter 12 and are applicable to the Rio Vista growth area. The following should be added.

Sec. 1.2 Uses Permitted. The following uses are permitted in "S" Zoning Districts:

- a. General Commercial, if zoned before July 1973
- b. General Manufacturing, if zoned before July 1973.

Sec. 1.4 Development Standards

a. Minimum building site area: The minimum building site area shall be one acre, or as established before July 1973 in the particular zone the route traverses.

b. Minimum lot width: The minimum lot width shall be 100 feet, or as established in the particular zone, prior to July 1973.

c. Required front yard: Each lot shall have a front yard at least 100 feet deep except that when a lot fronts on a street other than a route through scenic areas. This requirement may be reduced to not less than 25 feet from the road line through the architectural and site approval procedure.

d. Required site yards: Each lot shall have side yards at least 20 feet wide except as follows: On corner lots the minimum side yard abutting the scenic route shall be 100 feet. On corner lots adjacent to key lots the minimum side yard abutting a street other than the scenic route shall be 30 feet, or as established in the particular zone, prior to July 1973.

e. Required rear yard: Each lot shall have a rear yard with a depth of no less than 20 percent of the lot depth or 20 feet, whichever is smaller.

f. Landscaping: Where necessary, landscaping may be required consistent with the purpose of this ordinance.

g. Required removal of non-conforming signs: Any outdoor advertising sign or outdoor advertising structure which exists as a non-conforming use in an "S" Zoning District after the adoption of this Ordinance, as amended, shall continue as provided for non-conforming uses, except that every such sign or structure shall be removed within a period of five (5) years from and after the time that such sign or structure becomes a non-conforming use.

PART II. CHAPTER 23. SAFETY ELEMENT

A. FIRE HAZARDS

Rio Vista's fire department provides services to the Montezuma Fire Protection District (approximately the Planning Area) and houses four engines of the District and also three engines for the Delta Fire District.

The Fire Department operates with two full-time employees, 38 volunteer firemen and 10 junior volunteer firemen. Facilities include a training tower, one engine, two 1250 gallons per minute and one 750 gpm pumpers, one 50 ft. aerial ladder truck, one staff car and one ambulance. Fire rating is 5 in the City and 9 in the unincorporated areas. The lower number is considered desirable and results in lower insurance rates.

Although the 280 square miles Planning Area is very sparsely settled, the City of Rio Vista's residential area of about 1/3 square mile is housing about 3,270 residents. This is mentioned because residential densities are of great general importance in regard to conflagrations. Other major factors in conflagration include the high winds, adequacy of water supply, quality and quantity of fire fighting equipment and manpower.

The assumed expansion of the Rio Vista urban area and possible tripling of the population will need new fire equipment and one enlarged fire station. The existing station does not permit major additions. The map shows diagrammatically the new station in very approximate location only.

B. GEOLOGIC HAZARDS

Seismic hazards in the City of Rio Vista are described and mapped above in Chapter 20 of this Report.

C. BUILDING OCCUPANCY AND ESTIMATED POPULATION 1980, 1990

The number of injuries sustained as a result of a seismic calamity is highly dependent on the number of population in the area and on the time of day the shock occurs, e. g. during the night the population would be at home in bed; during after-lunch hour most of the population would be away from home; between 8.30 A. M. and 2.30 P. M. most students would assemble in school buildings.

1. Resident and Visitor Population

The City's 1970 population was 3,135 persons. Visitors in the Rio Vista Area are estimated to reach about 1,096 vacationers per day (400,000 visitor days divided by 365) by 1980 and about 1,603 (525,000 visitor days divided by 365) by 1990.

It is assumed that the total daily peak population figures for contingency plans purposes reaches nearly 8,000 persons by 1980 and about 13,000 persons by 1990. During the three Bass Derby days about 5,000 visitors each day should be added.

2. Division of Population

The identification and analysis of specific population characteristics as they relate to population concentration, population movement patterns or relationship of labor force to total population is important.

a. School enrollment

Of the estimated 4,900 population in Rio Vista Urban Area by 1980 about roughly 3,000 students are assumed to be enrolled in local schools, and of the estimated 9,000 population in Rio Vista Urban Area by 1990 about 5,500 students may attend classes locally.

b. Hospital

There are no hospital services in Rio Vista. Medical services both routine and emergency are available only in a very limited manner from two local practicing physicians and two practicing dentists. In an emergency there are 11 registered nurses that could be contacted, but may already provide First-Aid services at their place of employment. Some of the nurses work in the City, but not as nurses. One ambulance is housed in the Rio Vista fire station.

The provision of a local medical facility is mandatory within the framework of contingency planning. Number and types of beds is subject to discussions with agencies concerned and general agreement on standards. Assuming 2.4 beds for 1000 population, 18 beds would be needed by 1980 and about 30 beds by 1990 plus medical emergency equipment for contingency planning purposes.

Beds represent day and night occupancy. Hospital population would be about 35 persons by 1980 and 60 by 1990, including part-time employees and voluntary workers. The grave urgency for a medical facility within Rio Vista is underlined by a recent calculation which has been published by the Office of Emergency Preparedness and estimates the toll on human life by earthquakes for the San Francisco Bay Area.

The U. S. Office of Emergency Preparedness scenarios estimate the effects of a magnitude 8.3 quake, equivalent to that of 1906, striking along the San Andreas (figures for the Hayward are similar):

Scenario 1: Time - 2.30 a.m. Most people asleep in their homes. The area's nine dams hold. The toll: 3,000 killed, 11,000 hospitalized.

Scenario 2: Time - 2 p.m. Many people at work; streets and sidewalks busy; dams hold. OEP sees 9,500 killed, 35,000 hospitalized.

Scenario 3: Time - 4.30 p.m. Roads and sidewalks are crowded with rush-hour traffic, dams hold. More than 10,000 die, 40,000 hospitalized. Add the element of failing dams, and casualties soar - to 100,000 dead or injured.

c. Hotels - Motels

Other high - occupancy structures - apart from schools and hospitals - are hotels and motels. There are now 2 motels with 36 units, 2 hotels with 80 rentable units within the City of Rio Vista. Generally, Rio Vista's attractions are "outdoor" recreation and future hotel or motel demand will depend - amongst others - on the attractiveness of facilities.

Taking the assumed visitor days ratio increase as a basis for calculations, there will be a need for about 285 hotel - motel units by 1980 and about 400 hotel - motel units by 1990. This estimate assumes that roughly about up to 25% of daily visitors may stay overnight.

Hotel - motel units reach peak occupancy at night time. Apartment building activities is only on a minor scale in the Rio Vista area.

d. Home occupancy

1,625 low density housing units are estimated for contingency planning purposes to be in existence in the Rio Vista urban area by 1980 and 3,000 units by 1990, at 3.0 persons per unit.

Peak daytime residency occupancy in the City area is estimated to be 4,800 persons by 1980 and 8,960 by 1990. Night-time peak in the City area may reach 4,320 persons by 1980 and 9,460 by 1990.

e. Employment

Night-time employment is minimal. Day-time employment is now - as far as occupancy density is concerned within industrial structures - concentrated in Blackwelders manufacturing and iron works enterprises and also partly at the Sharpe army depot, maintaining and overhauling of marine amphibious and harbor craft equipment. Other industrial employment is related to outdoor work: gas production, highway construction, river dredging and similar activities.

Industrial day-time indoor jobs are estimated to require about 220 workers by 1980 and about 400 workers by 1990 in the Rio Vista urban area.

f. Others

Jail population or military population in the City's future are very low in occupancy density, although military training may add 500 persons to the peak population.

TABLE 23-1 SUMMARY OF POPULATION WITHIN BUILDINGS

Peak Daytime Population Estimate	1980	1990
	City Urban Area	City Urban Area
School Population	3,000	5,500
Residence Occupancy	1,625	3,000
Employment	220	400
Hospital Population (if constructed)	35	60
Peak Night-time Population Estimate		
Hospital Population (if constructed)	35	60
Hotels - Motels	285	400
Residence Occupancy	4,000	9,000

Note: Population concentration in Rio Vista at special events like "Bass Derby" is not included in the calculation, neither are restaurants, churches or theaters.

D. EMERGENCY ORGANIZATION

The City of Rio Vista's "Emergency Operation Plan" determines the local operations in coordination with the County's Emergency Plan efforts.

E. PRE-EARTHQUAKE PREPARATION AND EFFECTUATION

1. Vital Facility Structures

The jurisdiction will prepare a list of the most vulnerable structures with relation to their effect on emergency operation and will check the structural conditions:

a. Buildings and structures critical for disaster recovery:

- Fire stations
- Police station
- Utility complexes (Power, water, sewer, etc.)
- Airport

b. Buildings with high occupancy:

- Schools
- Hospital (after being constructed)
- Apartment buildings, churches, theaters, restaurants
- "Behind" levees (potential hazard).

2. Evacuation Routes

Major routes connecting Rio Vista with other areas include Highway 12 and 84. Highway 84 is partly located on the levees and may therefore be hazardous. Obviously this hazard is a possibility and not a probability.

The Highway 12 connection between Rio Vista and the County Emergency Center in Fairfield may represent a more serious problem.

Routes within the City should be kept open to areas of temporary shelter like high school and elementary schools. Suggested escape routes in the City are Front Street (Riverview School - Highway 12 Bridge), Main Street (City Hall - Highway 12 junction), 4th Street (High School, Bruning Avenue, Gardiner Way (to White School), St. Francis Drive and Airport Road (Airport and City Solid Waste Disposal site), 5th Street (between Main Street and Highway 12), Drouin Drive.

3. Estimated Peak Load Water Supply Requirements

The City of Rio Vista's water supply is now pumped from three City wells for its 3270 residents as shown in Table 23-2.

TABLE 23-2 WATER PRODUCTION CITY OF RIO VISTA, DECEMBER 1972

Well Number	Gallons of water per minute
7	600
8	450
9	600
Total	1650 gal/min.

Total City water output per 24 hours is roughly about 1.5 million gallons and an estimated capacity is about double that output. The average consumption is now about 1 million gallons per day. This leaves still some possibility for satisfying growing demands, if the underground aquifers are continuously recharged, if the pumps have no failures and if policies of water resources conservation are observed.

The City's Water Tower has a storage capacity of about 2 million gallons or average 2 days of existing water consumption. This is just sufficient to properly serve the City now with perhaps a few minor additions, according to Mr. George E. Alphin, City Administrator, whose observations are printed below.

Because water is not metered there is little noticeable effort to conserve this resource and there is a general public opinion opposed to meters at the present time. In the event the City would change to metering, it is believed that the amount of water available could be utilized to a greater extent and possibly provide for more growth.

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GENERAL LOCATION OF:

- EVACUATION ROUTES 1973
- FUTURE ROUTE
- WATER TOWER
- AREA SUBJECT TO UNCONTROLLED INUNDATION
- P.G. & E. YARD
- FIRST AID STATION (PART OF MEDICAL FACILITY)
- FIRE STATION
- SHELTER
- RADIO TOWER
- SOLID WASTE DISPOSAL SITE
- HELIPORT

SAFETY

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In addition to the supply situation there are also the pumping and transmission problems. Pumping facilities are barely able to keep up with peak demands in the summer and the facilities should be improved whether there is growth or not. Also, the water main capacities decrease over the years and therefore require existing available funds to constantly improve that situation. Extension of new mains to provide for growth would be necessary and in conjunction herewith, an annual ongoing five year plan should be adopted for the increasing of pumping and storage as needed along with water rate charges to fully support the water system without subsidizing it with tax revenue.

The existing water tower site is big enough to allow for additional water storage to meet the needs of a growing population to 9000 residents and 4000 visitors.

Water is available from wells and also a certain amount from the Sacramento River. Both are expensive and as growth occurs, both sources should be exploited. No significant development should be allowed to occur which proposes its own well system drawing from the common aquifer as this will allow depletion without accountability. All developments should be annexed as the City will bear tax burdens without supporting revenue if they are not.

The sewer provisions are basically the same in concept; however, they involve different facilities, namely lift stations and treatment plants. Rio Vista's sewer system is desperately needful of improvement particularly with the sewer mains, inasmuch as many of them are as old as the City and the material of construction in those early days has resulted in much deterioration and root intrusion. Much available local money has to be set aside merely to keep up with the repair and maintenance program with little left over for new improvements. Also the treatment plant must be modified in order to allow an effluent in full compliance with the new water quality standards.

The sewer plant itself has more capacity available for expansion than the water system; however, the sewer mains are less capable to carry any increased flow due to expansion, than the water mains. The existing plant site is big enough to allow plant additions owing to population growth expectations.

Water and sewer peak demands should be planned according to about 8000 persons by 1980 and about 13,000 persons by 1990.

(1) Financing possibilities of water supply requirements

Citizens locally seem to favor a moderate growth at this time and perhaps with a proper presentation of the benefits to be derived therefrom they may begin to support the necessary financing at the local level, for to desire one and oppose the other without alternatives would be counterproductive.

On the matter of growth adjacent to the City Limits, the question should be asked of the Citizens Committees what alternatives they might support regarding arrangements or agreements for extending water and sewer lines, adding to the storage capabilities and providing for treatment. A number of practices are employed by various cities depending upon the circumstances, such as, whether the City is attempting to attract and encourage growth or if it is a natural attraction. Among such arrangements are included regular policies of accumulating capital reserve and expansion funds which result in a so-called pay-as-you-go process with new additions to the City adding to the City's ability to expand. The general obligation or revenue bond approach was one of the more recent suggestions made during previous Council discussions of budgetary problems whereby the public would be called upon to approve expansion at the time it was needed. The developer sponsored improvement program whereby a subdivider or developer would advance funds necessary for improvements needed to support the project with the City reimbursing with revenues received as a result of the growth.

It is believed that the bond initiative process would be successful if the City found it necessary to improve something for existing local needs; however, looking at the history of bonds and the past attitudes of local citizens, it is doubted that they would pass a bond issue to make improvements for populations not yet here. The City would probably have to be fairly well modernized in order to attract subdividers or developers to the point where they would advance funds for their own development when other cities are making attractive proposals now. The capital expansion program seems to be the best in that it provides funds for any purpose as needed depending on the circumstances at the time. It is believed to be in the best interests of good management in government (or anywhere else) that such reserves be available and depending upon the desirability of a particular growth proposal, portions of reserve funds could be appropriated to encourage that growth.

Extension of new watermains to provide for growth would be necessary and in conjunction therewith, an annual on-going five year plan should be adopted for the increasing of pumping and storage as needed along with water rate changes to fully support the water system without subsidizing it with tax revenue. It is recommended that the Citizens' Committee on General Planning Policy and other interested citizens or groups be called by the City Government in order to discuss this specific set of questions and arrive at a concerted action program.

4. Minimum Road Width

In case of emergency roads must be wide enough to allow for at least one moving lane traffic in each direction. This is necessary to allow firefighting machines and heavy trucks and equipment for debris clearance to operate in emergency situations. This applies to all access roads to schools, hospitals, factories, public buildings and residences. All ordinances should be checked to assure minimum road width.

5. Clearance around Structures

The use of spaces around structures - especially in industrial areas - as temporary storage grounds should be in such a way, that access from all sites by fire trucks to the structure remains assured in emergency situations.

6. Levee Control

Regular control and maintenance of especially the levees northeast of the City of Rio Vista and also the west levee of the Yolo Bypass may avoid overflowing in times of emergencies. The local levee maintenance district and the U. S. Corps of Engineers have the main responsibility for the safety. This is in addition to a new area-wide Delta Levee Maintenance District.

7. Public Utilities

The most important public utility is water for firefighting during emergencies and for human use. Electricity is as vital, since the pumps to supply the water would not be able to work without energy source. The ensurance of rapid restoration of electricy is essentially a problem for P. G. & E. , while water supply is the City's responsibility.

F. POST-EARTHQUAKE OPERATIONS

Medical help for the injured must be provided locally in Rio Vista area. A local medical facility is mandatory to provide at least the first-aid services to save lives.

Fire prevention, fire-fighting and life-saving services must be adequate.

These operations are part of the County's and City's responsibility and include:

The very first steps are for the rescue teams to bring wounded and trapped people from damaged structures to the Rio Vista medical facility. It should be repeated here again that a local medical facility to provide basic services is mandatory for saving lives.

Transportation route to the Solid Waste Disposal Site must be kept open to clear debris from damaged areas.

Evacuation routes from danger areas to shelters (schools) must be kept open.

PART II. CHAPTER 24. RIO VISTA CENTRAL BUSINESS DISTRICT

SECTION 1. BACKGROUND

A. HISTORICAL DEVELOPMENT

Although Rio Vista's history started in 1858, the present pattern of streets and alleys of the Central Business District area was developed in the 1860's. At that time the City's economic importance consisted of fishing (salmon) and early this century agriculture (asparagus) was added and combined with cannery. Farm machinery and later natural gas extraction provided the economic base for the about 3,400 citizens, by July 1973.

B. CENTRAL BUSINESS DISTRICT

Main Street is the core of the City's Central Business District. The 80 feet wide Main Street had treelined pedestrian walks. The driveways have been widened to about 64 feet between 5th Street and the riverfront some years ago in connection with the Highway 12 construction.

Highway 12 provides now commercial and service facilities for through traffic, mainly recreationists and visitors during the season.

Front Street's commercial activities concentrate now on "Auto Row", agricultural machinery and construction yards.

This report deals with Main Street only.

C. PROBLEMS, ASSUMPTIONS AND GOALS

1. Problems of Main Street today include:

a. Large new shopping centers have been located in the fast growing cities of Fairfield and Lodi - both about 20 miles away from Rio Vista on Highway 12. Rio Vista's older downtown has been disadvantaged by these new commercial developments.

b. The competition of Fairfield's and Lodi's new shopping facilities are also reflected in Rio Vista's sales fluctuations.

c. The City is relatively "isolated". There is no urban development - with the exception of Isleton - within a radius of 20 miles with a consequently limited number of shoppers.

Physical characteristics are evaluated in Section D of this Report.

SECTION 2. BASIS FOR THE DEVELOPMENT PLAN

A. Establishment of the trade area from which the bulk of support for existing and possible future commercial facilities in the Central Business District of Rio Vista would be expected to come.

1. Geographical Extent

The Rio Vista Trade Area represents the area from which the majority of support for commercial facilities is now derived. This area also represents the trade area from which future support can be anticipated under the assumption that Rio Vista's commercial enterprises are increasingly competitive, the Central Business District's physical appearance will improve and more parking will be provided.

The trade area includes most of the Southeastern Solano County Planning Area in the south, west and north of Rio Vista. Parts of the population to the far west of Rio Vista may use commercial facilities in Fairfield.

To the east of Rio Vista the trade area consists of the Isleton urban area, Walnut Grove, Courtland, Locke and remaining rural parts in Sacramento County.

2. Trade Area Accessibility

Key access to Rio Vista is mainly by State Route 12 from the east and west. Therefore the importance for Rio Vista of the work by "Highway 12 Association" cannot be stressed enough. Other routes include: State Routes 220, 160, 113, 84, Liberty Island Road, Ryer Road and Montezuma Hills Road.

B. Analysis of the population of the trade area in order to determine its size and future growth prospects.

The existing and projected population has been studied in the 100-page Report "Population and Economics", October 1974 and only the key population Tables are repeated in the following.

It is assumed for the purpose of retail calculations and planning purposes - that the Rio Vista urban area will have about 4,900 and about 9,000 residents in 1980 and 1990 respectively.

Visitors or recreationists are expected to increase as shown in the following Table 24-2.

Owing to Rio Vista's strategic location and to her size in relation to the surrounding smaller communities, the City's trade outlets serve as a major supply center for residents from the surrounding area.

TABLE 24-1 RESIDENT POPULATION CHANGE, 1970, 1980, 1990

	1970	1980	1990
City of Rio Vista	3,135	4,900	9,000
Remaining Southeastern Solano County Planning Area	1,001	1,750	2,500
Delta Rural, Sacramento County*	7,532	7,160	7,160
Fairfield	44,146	est. 88,700**est	110,000**
Lodi***	28,691	34,716	42,005
Antioch***	28,060	50,000	67,000

* Delta Rural incl. : Isleton, Locke, Walnut Grove, Courtland, etc.

** General Plan in process of being updated. Above estimates are "high".

*** According to Planning Departments of the Cities.

Source: Southeastern Solano County Planning Program Report 5, "Population and Economics", 1972, p. 1-28.

TABLE 24-2 VISITORS CHANGE, RIO VISTA AREA - ESTIMATED VISITOR DAYS/YEAR

1971	225,000
1980	400,000 77.8 percent increase over 1971
1990	585,000 46.3 percent increase over 1980

Source: Southeastern Solano County Planning Program, Report 5 "Population and Economics", 1972, p. 2-57.

As can be seen from Table 24-3, about 4,090 residents in and around the City of Rio Vista are estimated to have done their shopping of non-durable goods in Rio Vista in 1972.

C. Identification of income levels within the trade area by appropriate sectors and an estimate of the per capita expenditures and the types of retail facilities which may be available in the Central Business District.

1. Income Level

The median* and mean** incomes are shown in Table 24-4.

* Median income is the amount which divides the distribution into two equal groups, one having incomes above the median and the other having incomes below the median.

** Mean income is the amount obtained by dividing the total income by the number of participants.

TABLE 24-3 RETAIL SHOPPING SERVICE AREA, RIO VISTA - 1972

Place	Number of Residents	Estimated percent of total population and number to shop for non-durable goods in Rio Vista	
		%	Number
Rio Vista	3,220	100	3,200
Southeastern Solano County Planning Area	1,000	50	500
Delta Census Division (7,532 pop.)			
Sacramento County, incl.			
Isleton (before flood)	900 (May 1973:650 Estimate)	10	90
Walnut Grove	785	5	40
Courtland	600	5	30
Locke	1,001	-	-
Remaining rural	4,237	5	210
Total	11,752		4,090

Source: Consultant's compilation from several sources.

TABLE 24-4 INCOME OF FAMILIES (1970 U. S. Census)

Area	Median Family Income	Mean Family Income
Solano County	\$ 9,880	\$10,653
Southeastern Solano County Planning Area		
incl. City of Rio Vista	9,753	10,889
County of Sacramento	10,566	11,737
City of Isleton	5,043	n. a.
(State of California)	10,732	12,227)

As indicated in the Table 24-4 the income level of the Planning Area and Rio Vista is above the Solano County mean income, but still under the State's income. The Isleton area - part of Rio Vista's Trade area - has an income of less than half of the State's or Sacramento County's income. Shopping from that part of the Trade Area may be minimal.

2. Estimate of per capita expenditures and types of retail facilities.

Sales "per capita" are derived at by dividing the sales figures by 4, the number of persons per family generally used for calculations.

No retail sales data are available for the Southeastern Solano County Planning Area as such, but only for Solano County as a whole and the cities separately.

Rio Vista residents have one of the highest incomes in Solano County, which results in trying to draw part of the local buying power away to other areas like Lodi, Antioch, Stockton and Fairfield. The River News Herald - Rio Vista's newspaper - carries regularly numerous advertisements from the above areas, also occasionally from Isleton, Courtland, Walnut Grove (but none from Fairfield). Shopping for specialized items by Rio Vista residents is done in Lodi and Fairfield - both about 22 miles east and west respectively from Rio Vista on Highway 12 - and in Stockton. Retail data have been compiled for the three cities for selected years since 1961 and are presented in Table 24-5.

TABLE 24-5 NUMBER OF PERMITS TO SELL TANGIBLE PERSONAL PROPERTY AND AMOUNT OF TAXABLE SALES (Taxable Transactions in Thousands of Dollars)

	Total Population	Number of Total Outlets	Taxable Transactions
1961:			
Fairfield	14,968	248	18,523
Rio Vista	2,616	86	7,440
Lodi	22,299	620	36,271
1965:			
Fairfield	28,285	313	28,747
Rio Vista	2,855	96	7,879
Lodi	25,911	689	46,667
1971:			
Fairfield	46,250	436	57,571
Rio Vista	3,230	97	9,479
Lodi	29,600	706	70,881
1972:			
Fairfield	51,000*	475	74,552
Rio Vista	3,400*	92	10,660
Lodi	30,500*	725	86,743

Source: Consultant's compilation from "State Board of Equalization" data, Sacramento, 1961, 1965, 1971, 1972 Annual Reports.

* Estimate by Consultant.

What can be seen at a glance from Table 24-5 is the strong position of Lodi as a major valley retail center in comparison to Fairfield, which is the fastest growing City in the region. Rio Vista added 11 new trade outlets between 1961 and 1971 and lost 5 outlets, but gained \$1,181,000 sales in 1972.

The 1972 value of transactions increased by more than 3 million dollars over 1961. This shows a great strength of Rio Vista's merchants, considering the strong competition at both sides of Highway 12. On the other hand the City of Rio Vista's percent of Solano County's taxable sales is declining over the last ten years, as shown in Table 24-6. This may mean that - although Rio Vista is holding her own - other cities in Solano County attract more dollars for more specialized type of shopping owing to their intense population concentration and consequently greater variety in merchandizing.

TABLE 24-6 TAXABLE RETAIL SALES, SOLANO COUNTY - CITY OF RIO VISTA
(In Thousands of Dollars)

Year	Solano County		Rio Vista		Rio Vista percent of Solano County	
	Population	Sales	Population	Sales	Population	Sales
1961	139,300	130,402	2,700*	7,440	1.92	5.7
1968	169,700	237,370	2,950*	10,489	1.74	4.4
1971	178,500	276,451	3,230	9,471	1.81	3.4
End 1972	182,400	320,289	3,400*	10,660	1.86	3.3

* Estimated

Source: Consultant's compilation from 'State Board of Equalization' data, Sacramento, Annual Reports.

Table 24-7 shows the fluctuations of number of outlets and of taxable sales in the City of Rio Vista between 1961 and 1972. The nationwide economic downward trend in the late 1960's is also reflected in Rio Vista with a strong upward trend since 1971, reaching nearly the 1968 peak, also reflecting accelerated sales during the Isleton flooding.

TABLE 24-7 TAXABLE SALES AND PERMIT DATA, 1961 - 1972 CITY OF RIO VISTA

Year	Number of Total Outlets	Taxable Transactions
		(In Thousands of Dollars)
1961	86	7,440
1962	89	7,162
1963	87	7,672
1964	91	7,674
1965	96	7,879
1968	91	10,489
1969	99	9,429
1970	107	8,325
1971	97	9,471
1972	92	10,660

Source: State Board of Equalization, Sacramento, Annual Reports, 1961 - 1972.

Table 24-8 shows the types of retail facilities and their business transactions. Apart from the overall economic recovery since 1969 the Table shows special strength in auto business and food.

TABLE 24-8 DETAILED TAXABLE TRANSACTIONS*, RIO VISTA, 1969 - 1972
(In Thousands of Dollars)

Type of Business	1968	1969	1970	1971	1972
Retail Stores					
Apparel stores)					
General merchandise stores)	875	873	859	854	872
Drug stores**)					
Food stores**)	895	936	932	1,012	1,010
Packed liquor stores)					
Eating and drinking places	961	817	922	1,042	957
Home furnishings and appliances)	2,554	1,976	1,499	1,582	1,999
Bldg. matrl. and farm implements)					
Auto dealers and auto supplies)	2,737	2,721	2,364	3,080	3,475***
Service stations**)					
Other retail stores	501	436	321	431	350
Retail stores Total	8,523	7,759	6,897	8,001	8,663
Business and Personal Services	272	272	270 ((1,470	1,997
All other Outlets	1,694	1,398	1,158 (
Total All Outlets	10,489	9,429	8,325	9,471	10,660

* The taxable transactions represent sales subject to state sales and use taxes prior to January 1, 1968, and to local sales taxes subsequent to that date.

** Tax-exempt sales for consumption rather than resale, consisting primarily of sales of food for off-premises consumption, prescription medicines, and gasoline are not included in this Table.

*** Gasoline became subject to the sales tax July 1, 1972.

Source: Data supplied by State Board of Equalization, Sacramento, 1971, 1973. Prepared by the Board at request of George E. Alphin, Administrator, City of Rio Vista, 1971, 1973.

D. Evaluation of the physical characteristics of Downtown Rio Vista, based upon a field survey.

1. Physical Characteristics

Downtown Rio Vista - Main Street - consists of the oldest part of the 114 year old Rio Vista. The commercial areas are generally one - half to one block deep on both sides of Main Street between 4th Street and Front Street. Between 4th Street and Highway 12 the old homes are still dominant with many old trees preserved along the unwidened Main Street. Between Front Street and the Sacramento River at the waterfront is City Hall next to a big dry boat storage tin shed.

Apart from the Hotel Rio Vista the building height does not exceed about 2 stories, which is pleasant.

The shopping frontage is interrupted by alleys and vacancies. The Main Street blocks between roads are relatively small (260 feet by 260 feet) and divided by 20 feet wide alleys. Closing of alleys towards Main Street - where possible - would increase the continuity of shopping frontage.

Physical constraints include:

Existing lack of parking facilities does not encourage shopping.

Since Main Street is not a through-traffic route and not carrying a heavy traffic volume, the wide and empty driveways serve sometimes as a racing track.

"Shopping atmosphere" is constrained by the too wide asphalt, no trees, no protection of shoppers against rain or sun, no easy parking and no flowers, shrubs or planters, etc.

2. Land Use

Main Street's commercial land use is concentrating on retail and on business and personal services as illustrated on the map 'Land Use 1973'. For better understanding and future detailed planning the relationship between Main Street, Highway 12 and Front Street, the whole area (the Rio Vista "Triangle") has been surveyed, mapped at a scale of 1 inch equals 100 feet and printed.

The commercial land use square footage within 1 1/2 blocks to each side of Main Street between Highway 12 junction and Waterfront in April 1973 is estimated as follows.

CITY OF RIO VISTA * CALIFORNIA

CITY OF RIO VISTA PLANNING COMMISSION

CENTRAL BUSINESS DISTRICT



TABLE 24-9 COMMERCIAL LAND USE, MAIN STREET, APRIL 1973
(incl. 1 1/2 Block on each side)

Type	Square foot
Business & Personal Services	
Personal, professional & business administrative	102,000
Cars & parts	13,000
Gasoline Station*	
Convenience Goods (food, drug, hardware, etc.)*	49,000
Comparison Goods (clothing, furniture, department store, etc.)	25,000
Oil Wells & Services, Tractor Sale	75,000

The remaining land uses consist of City Hall, Fire & Police Services, Lodges, Library, Churches, and mainly residences.

* The Mobile Gasoline Station, A & W. , Don Quick on Highway 12 are not included.

Note: Vacant commercial structures have been calculated as used according to last type of occupancy.

E. Estimation of the adequacy of existing Central Rio Vista retail trade facilities to accommodate the total potential currently available as well as the sales potential expected in the future from the Trade Area.

1. Existing Potential

The City currently (April 1973) serves approximately 3400 Rio Vista residents or only 1.86 percent of the County's total of 182,400 population, while the Rio Vista percent of Solano County Sales is 3.3 percent. Besides the fact that the City serves the surrounding trade area, the comparatively high percentage is partly due to the recreation industry as a result of the many visitors.

Existing facilities as far as square footage is concerned are more than adequate, based on some vacant stores along Main Street.

2. Expected Future Potential

a. Sales potential (Residents)

The retail trade potential which may be attracted to the shops in the Planning Area and the City of Rio Vista and Trade Area from the Isleton surrounding is estimated in the following.

It is assumed - for the purpose of retail calculations and planning purposes - that by 1980 and 1990 the Rio Vista Urban Area will have about 4,900 and about 9,000 residents respectively.

The resident population for the two target dates within the Flanning Area (without the Rio Vista Urban Area) is estimated at about 1,750 and 2,500 by 1980 and 1990 respectively. The Trade Area is assumed to remain constant with 370 shoppers for non-durable goods.

The figures arrived at, as presented in Table 24-10, have been prepared under the assumption that about 6,650 persons by 1980 will shop in Rio Vista outlets, and that by 1990 about 11,500 persons will do so.

TABLE 24-10 ESTIMATED TAXABLE AND NON-TAXABLE RETAIL SALES TO RESIDENTS, 1971, 1980, 1990 - RIO VISTA, SOUTHEASTERN SOLANO COUNTY PLANNING AREA (1971 Dollar value, rounded off)

	1971		1980		1990	
	Population	\$ Sales	Population	\$ Sales	Population	\$ Sales
City of Rio Vista	3,230	9,450,000	4,900	11,000,000	9,000	20,100,000
Rio Vista Urban Area						
Remaining Planning Area	1,001	none*	1,750	3,900,000	2,500	5,600,000

Source: Consultant's compilation from Report 5, 'Economics & Population', 1972, p. 2-28.

* Only one very minor outlet in Birds Landing.

** Eating and drinking places for Meridian Airport are not included.

Note: In order to arrive at a conservative estimate the 1971 equation between Population / \$ Sale has been used for the future figures.

b. Sales potential (Recreationists)

A detailed study in Report 5 'Economics and Population', 1972, pp. 45 - 59 arrives at a considerable growth of recreationists as shown in Table 24-11.

TABLE 24-11 GROWTH PERCENTAGE OF RESIDENTS AND RECREATIONISTS - 1971, 1980, 1990.

	1971	1980	% increase 1971/ 1980	1990	% increase 1980/ 1990
Residents	4, 090	6, 650	61. 5	11, 500	72. 9
Recreationists	225, 000	400, 000	77. 8	585, 000	46. 3

3. Space Requirements

The next consideration is the acreage required for retail sales related to recreationists' spending.

The forecast of retail sales area warranted for selected retail items is estimated on the basis of "normal" sales productivity per square foot, as is illustrated in Table 24-12.

The total requirement of 656,000 sq. ft. reflects the sale of non-durable goods to residents and recreationists at the total amount of \$6,400,000. Recreationists' spending of this total amounts to about 27.4% (according to data from Report 5, pp. 51-52). The last column of Table 24-12 is not applicable for Main Street, because no "open design, landscaping and vast car park" is possible - in contrast to new developments on large, unbuilt acreages.

Consequently the acreage required for retail sales to recreationists is calculated to be about 27.4% of 656,000 sq. ft. or about 180,000 sq. ft. by 1971. This base figure already takes into account more parking, open design, landscaping etc. for the new recreation industry development to 1990. Considering the increase of number of recreationists of 77.8% by 1980 and 46.3% by 1990 over 1980, the acreage requirement is estimated accordingly at approximately 320,000 sq. ft. by 1980 and 508,000 sq. ft. by 1990.

TABLE 24-12 SELECTED RETAIL SALES, 1971 - RIO VISTA
SQUARE FOOTAGE ESTIMATES FOR RESIDENTS & RECREATIONISTS

Item (Retail only)	1971 Sales	"Normal" Volumes per sq. ft.	1971 sq. ft. GLA* required	1971 sq. ft. Total Area** GLA x 4
Apparel, General merchandise, Drug stores	\$1,014,000	\$ 70	15,000	60,000
Food stores, packaged liquor	3,252,000	125	26,000	104,000
Eating and drinking places	1,042,000	75	14,000	56,000
Service stations***	1,092,000	10	109,000	436,000

* Gross Leasable Area, applicable to Main Street.

** Includes parking and other common area for new developments. (Urban Land Institute standard). Not applicable to Main Street.

*** Located along Highway 12.

Source: Consultant's compilation.

It should be noted that the "normal" volume method or residual approach does not necessarily give a fully accurate picture of the future retail opportunities in any specific category. While the residual approach considers the strength of existing facilities, it does not account for the impact which new facilities might have in a highly competitive market. The over-all discussion is useful, rather in providing a general indication of the relative strength of the opportunity for selected categories on Main Street area. This report has been prepared for planning purposes rather than for individual clients interested in developing specific retail outlets.

F. Estimation of the total retail potential which would be available to downtown Rio Vista under the assumption that concerted action would be undertaken to improve the core area.

In order to estimate the amount of future sales to be "conquered" by Main Street markets, it is necessary to summarize the total amount of retail sales to be expected. The figures in the Table 24-13 are based on foregoing considerations.

TABLE 24-13 SUMMARY OF RETAIL ESTIMATED IN SQUARE FOOTAGE
1980, 1990 (1971 Dollar values).

		1971	1980	1990
Residents (Trade Area)	Population:	4,900	6,650	11,500
	Retail Sales:	\$6,500,000	\$14,900,000	\$26,800,000
	Square Footage	210,000 sq. ft.	285,000 sq. ft.*	495,000 sq. ft.
Recreationists		<u>180,000 sq. ft.</u>	<u>320,000 sq. ft.</u>	<u>503,000 sq. ft.</u>
	Total Square Feet	390,000 sq. ft.	605,000 sq. ft.	1,000,000 sq. ft.

Note: The future square footage for residents is conservative and does not reflect rising real income with greater spending power.

* The figure is based on \$75 "normal" volume per square foot, less 180,000 sq. ft. and multiplied by 4 to include parking, open design and landscaped areas.

1. Growth of retail shopping areas

Within the 1973 City Limits there is the Central Business District (Main Street area) and the Highway 12 commercial strip. Planned for the future are commercial facilities along Front Street and Sacramento River mainly for tourists and neighborhood shopping facilities in the new residential areas planned northeast of town.

The retail sales in the following Table 24-14 are based generally on the estimated percentage of residents and recreationists in 10 year increments.

TABLE 24-14 RETAIL SALES ESTIMATES IN DIFFERENT CENTERS,
RIO VISTA URBAN AREA (Approximate square footage)

Location	1971	1980	% Incr.	1990	% Incr. over 1980
Main Street Area	150,000*	200,000	33%	300,000	50%
Highway 12 Area	240,000**	350,000	46%	475,000	36%
Front Street Area		25,000		75,000	200%
New Neighborhoods		25,000		150,000	500%
Total Est. sq. ft.	390,000	605,000		1,000,000	

* Includes also part of "Business and Personal Services", an important Central Business District land use, rounded-off.

** The "Point" restaurant is included here.

New shops will be built to the northeast of the City with neighborhood commercial facilities. Such a center provides goods and services in limited depth and variety to satisfy daily living requirements. The number one tenant is a supermarket with a few more tenants like barber, etc.

Additional new shopping outlets (mainly for recreationists) are planned to be built as part of the Front Street development. More land use change along Highway 12 within Rio Vista will occur towards mainly oriented recreationis through-traffic. Although not mentioned here specifically with a distinct geographical location, more commercial facilities may be developing.

The retail strength of Main Street area - the subject of this report - will more and more concentrate during expected growth towards mainly major specialty shops, such as clothing, general merchandise, sporting goods, jeweler, records and music, T. V. and radio and similar specialty shops. Also services like hotel, special restaurant and bar, or personal services will find a Central Business District location suitable. Near to the waterfront recreation catering may be thriving during the season,

If the Main Street area is improved, it is assumed that the growing number of local residents will hopefully support the local merchants. Much will also depend on the way of merchandizing and variety offered. The degree of effectiveness of new facilities on Main Street will depend - to a large extent - on the comparative strength vis-a-vis the established facilities. If a new outlet is more modern, is better designed and has a more aggressive management than its established competitors, it may be able to generate enough business to justify its place at the expense of the established local competition.

SECTION 3. DEVELOPMENT PLAN

A. Preparation of Development Plan to include recommendations for land use development, parking, circulation, sketch for a redesigned Main Street, extending north to Highway 12.

1. Concept

The concept of the Main Street Development Plan has been recommended on August 31, 1972, in City Hall to the Citizens' Committees on Central Business District and General Planning Policy, and others. A semi-mall concept was suggested and discussed during that meeting, and generally agreed on at the July 17, 1973 meeting.

A semi-mall concept permits the same type of traffic on Main Street as before. The 64-foot wide traffic lanes (consisting of 2 lanes in each direction and 2 off-street parallel parking lanes) lends itself to the semi-mall concept. It is suggested that one-way moving lanes in each direction remain, that parking potential should be maximized and that sidewalks be adjusted for safety reasons at corners.

2. Land Use Development

The total future retail potential available along Main Street is estimated to be about 200,000 square feet by around 1980 covering about one more block than by 1973. Later, towards the 1990's two more blocks in the Main Street area may be used for Central Business District commercial facilities. The square footage will depend on the amount of parking needed, open design and landscaping and the number of stories of the specific facility.

5th and 7th Street along Main Street towards Highway 12 may very well satisfy the additional commercial demand. This is reflected in the General Plan map 1990 where 1/2 block on each side of Main Street is shown as commercial.

There is no need to separate the different types of commercial land uses into identifiable districts because the Main Street development is too short and too small to justify such a complicating step.

Land use at the "terminal vista" on Main Street is now grasslands opening the view to the Sacramento River. It is suggested that the view remains open. That may also be achieved by two buildings "flanking" the view or by a building sitting on a very high arch, which would be a doubtful feature.

3. Parking and Circulation

a. Parking

Main Street is 80 feet wide with 64 feet standing and moving traffic lanes between the curbs. The traffic lanes are not used and could better be utilized to maximize parking spaces - one of the worst problems in all Central Business Districts. A parking survey in April 1973 4:00 P. M. along Main Street between 5th and Front Streets revealed a total of 89 parallel on-street parking spaces and they were all used.

Since there is enough empty asphalt available and the need for more parking spaces established, diagonal parking design is strongly recommended. One diagonally parked car would need about 10-feet-run curb space and about 18 feet diagonal length for one stall. Considering widened sidewalk for driving safety on curves and two blind stalls at alleys, about 36 car parking stalls could theoretically be provided along one block. The detailed survey between Front and 5th Streets of existing diagonal parking potential is shown in Table 24-15. The exact amount of diagonal parking stalls along the four blocks depends on the angle of parking, the width of stalls and on the number of lost stalls owing to alleys or entrance to off-street parking lots.

In addition to the on-street parking stalls there are at this time 70 off-street parking stalls directly accessible from Main Street between Front Street and 5th Street and additional 50 within one block on each side of Main Street.

TABLE 24-15 COMPARISON OF STALLS IN PARALLEL OR DIAGONAL ON-STREET PARKING. MAIN STREET 1973

Location	1973 Parallel		Proposed Diagonal	
	East curb	West curb	East curb	West curb
Block between Front Street & 2nd Street	12	9	18	15
" " 2nd Street & 3rd Street	10	9	20	14
" " 3rd Street & 4th Street	10	6	16*	10**
" " 4th Street & 5th Street	12	11	18	17
	44	45	72	56
Total	89		128***	

* Food Fair parking lot exit to 4th Street only.

** Includes one stall along Fire Station, as is now.

*** This figure does not represent the maximum parking capacity.

The number of 128 diagonal parking lots along both sides of four blocks is conservative and shows a sure way to remedy immediately the lack of existing parking facilities.

b. Circulation

1.) Cars on Main Street

On both northsides of 4th Street crossing with Main Street the corner sidewalks should be already provided with a proper radius for safety reasons. No through traffic is now in existence, nor planned along Main Street. With growth and development transit bus service will connect Rio Vista and a bus stop and/or station should be planned at that time.

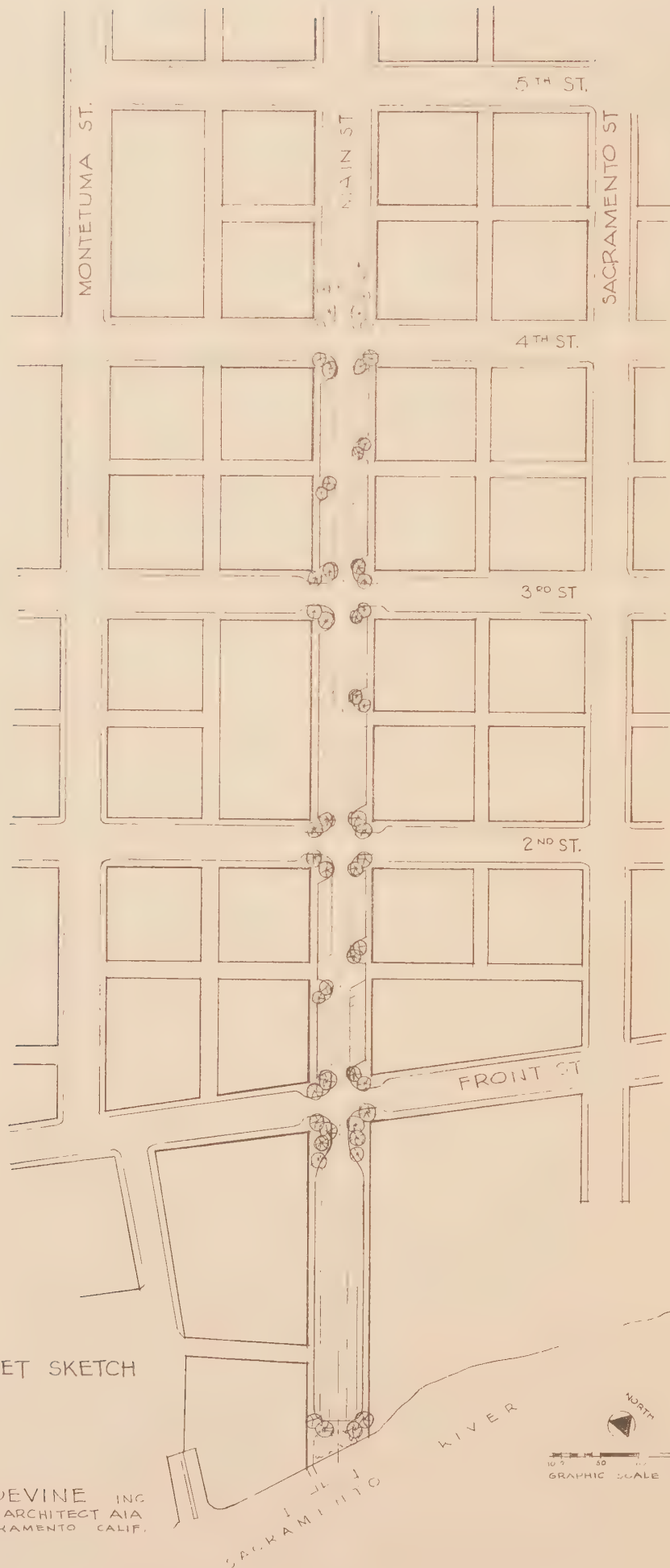
Circulation would be eased by closing some of the alleys entering Main Street, which also would enhance shopping front continuity.

2.) Pedestrians

Most shoppers experience walking as a pleasurable activity if a suitable environment is provided. (Shade, protection against rain, trees, plants, etc.). Pedestrians may also spot a bargain while walking and do also "spontaneous buying".

How far do people walk? One block length is estimated to be about a one-minute walk. Four Rio Vista blocks - both ways - would need about 8 minutes. The additional blocks by 1990 would bring the walk both ways to 14 minutes or more. That would be the now perceivable maximum pedestrians would walk and the attractions must be well spaced to get the shoppers attention.

The traditional Bass Derby Parade in Rio Vista by the Chamber of Commerce uses usually 3 rows of participants following the yellow lines (painted on the asphalt) which will not be used by diagonal parking. In any case, during the Parade no cars are or will be allowed on Main Street.



MAIN STREET SKETCH

HARRY J DEVINE INC
ERWIN E. NOWAK, ARCHITECT AIA
1012 J STREET SACRAMENTO CALIF.

4. Main Street Redesigned

The drawing for the design diagram map for a redesigned Main Street has been prepared - at the request of your consultant - by the Sacramento firm of

HARRY J. DEVINE , INC.

ERWIN E. NOWAK, ARCHITECT, AIA.

The sketch represents only one of the possibilities for redesigning Main Street. Emphasis is on "feasibility" with suggesting only those improvements which can and must be afforded.

Basic (public) improvements include:

- Priority is on diagonal parking, with enlarged sidewalk radius at corners for parking safety;
- Sidewalk surfaces to be a combination of asphalt, concrete with terrazo block inserts and red tile trim at corner areas or other combinations;
- Utilities underground;
- Trees with trunks high enough in order not to interfere with the "line of vision" at street corners;
- Flower planters;
- Benches;
- Trash baskets;
- Sculptures or water fountains are optional.

Other "streetfurnitures" to be considered (city, utilities, others) in the detailed design for construction stage, include:

- Public telephones;
- Traffic signals;
- Mail boxes;
- Fire alarms & hydrants;
- P. G. & E. control box;
- Others.

Further improvements in (private) buildings to be considered include:

- Canopies to provide shelter against rain and provide shade in the hot summer months;
- Repainting of buildings where needed;
- Facelifting by new signs subject to style of lettering, color and size control;
- Others.

Independent of the amount of money spent on public improvements, Main Street will only attain its potential with voluntary, private investments. This is where the Chamber of Commerce could strongly encourage a brush-up and paint-up campaign directed towards the respective landowners and merchants.

SECTION 4 IMPLEMENTATION

The first step towards the realization of Main Street improvements is related to the three blocks between Front Street and 4th Street. To implement the suggested improvements like parking and change of image through trees, brush-up etc. is basically a combination of public and private investment policies.

A. ORGANIZATION FOR IMPLEMENTATION

Since everyone seems to agree on the need to maximize the parking potential and to uplift the Main Street image, no major constraints seem to be in the way for early realization of the project.

The parties to agree on the concept and on the financing and phasing of implementation are (alphabetically):

City Council
 City Planning Commission
 Chamber of Commerce
 Citizens' Committee on Central Business District
 Citizens' Utilities Company
 Pacific Gas & Electric Company
 Merchants and Landowners affected
 Other, as needed.

The City Council should adopt a policy, under which no action would be taken on any plan without complete and detailed information being furnished to all citizens, merchants or landowners, who might be affected by the Main Street Plan.

B. ELEMENTS OF IMPLEMENTATION

The following listing suggests action NOW. In practical terms agreement must be reached by the above mentioned parties on the three blocks plan and on a geographical area for undergrounding of P. G. & E. utilities. After the "Undergrounding Area" has been designated the utility companies should estimate their undergrounding expenses. The general estimated range of expenses will determine the utility companies' participation, the landowners and the City's shares.

Immediate attention should be given to the area of the "Underground District", because P. G. & E. will need about 4-6 months for detailed construction expense estimates. In the meantime the City in coordination with affected landowners may want to start preparation of more detailed design for diagonal parking with increased corner - sidewalk radius.

During the same time decisions can also be made on the type of trees and other landscaping material. Also the variety of paving surface materials at corners can be discussed.

C. ESTIMATED RANGE OF OUTLAYS

Public and quasi-public expenditures along the 3 blocks on Main Street include parking and sidewalk radius enlargement at corners, utilities undergrounding and street improvements for pedestrians.

Only the "public" expenditures are estimated in the following Table 24-16.

TABLE 24-16 ESTIMATE OF "PUBLIC" EXPENDITURES, MAIN STREET IMPROVEMENTS, 1973 - Front Street to 4th Street

Subject	Cost estimate at 1973 Dollar Value		
Painting of 217 parking stall lines	\$ 400	-	450
Sidewalks at corners at 8000 sq. ft. per block plus 4000 sq. ft. at Front and on 4th Streets. Variations of sidewalk surfaces at \$1.00 to \$1.10 per sq. ft.	28,000	-	30,000
Utilities Underground	P. G. & E. City Utilities & City of Rio Vista (yet unknown figure)		
45 Trees at \$100 - \$110 each	4,500	-	4,950
30 Flower Planters at \$20 each	600	-	600
14 Benches at \$100 - \$110 each	1,400	-	1,540
17 Trash Baskets at \$25 each	175	-	175
Labor for above last 4 items	1,000	-	1,200
Traffic signs	300	-	325
Technical Services	2,000	-	2,500
	38,375	-	42,540

The about \$40,000 figure does not include all utilities expenses (undergrounding, street lighting) and no indication can be given at this time of the amount of participation of Utilities Companies in the total expenses, and consequently the amount of City's and landowners' participation.

D. ALTERNATIVES FOR FINANCING OF IMPROVEMENTS

1. Banking and financial institutions in Rio Vista should be given the first opportunity for financing participation.

2. The City of Rio Vista is included in the California Public Utility Commission program for P.G. & E. Undergrounding Utility Conversion Funding and has accumulated a sizable amount of dollars over the years for the Central Business District Main Street area undergrounding project.

3. One of the suggestions for additional financing could be an "Assessment District" for the improvement area. The City Council can vote for a respective ordinance and assesses the landowners directly.

4. Voluntary participation of each affected property owner and/or businessman.

5. Adherence to the City Codes can be encouraged by the City - if the detailed plan asks for it - by involvement in on-street loading, illegal parking in loading zones, and blocking of alleys.

6. Federally assisted financing seems undesirable for this small and basically only parking and facelifting project.

E. RELATION TO GENERAL PLAN AND ZONING ORDINANCE

The improvement of Main Street area is stated in the General Plan Map and also the existing Zoning Ordinance provides for the proposed changes along Main Street.

F. PROMOTIONAL ACTIVITIES

Promotional activities are an important part of the implementation program, particularly in the early stages.

Publicity and promotion should be undertaken by the Rio Vista Chamber of Commerce, the real estate profession, and the financial organizations of Rio Vista. Examples of projects to be promoted would be boatels mooring at the end of Main Street with water entertainment facilities, restaurants and other related tourist uses.

APPENDIX

ENVIRONMENTAL IMPACT REPORT

(Division 6, Title 14, Chapter 3)

A. GENERAL (15000)

The California Environmental Quality Act of 1970 (CEQA). Under the CEQA, as amended after the decision in *Friends of Mammoth v. Mono County* holding that the CEQA applied to private as well as public projects, an Environmental Impact Report (EIR) is required for any project that may have a significant effect on the environment.

The State Guidelines. The CEQA directed the Secretary for Resources to prepare and issue state-wide guidelines for the preparation and processing of environmental impact reports. These State Guidelines were issued on February 10, 1973, and they contain a number of important refinements in the environmental impact process established in the CEQA.

The Secretary determined that there are several classes of projects that will not have a significant effect on the environment under almost all circumstances. Such projects are to be considered "categorically exempt", and no EIR is required before approving or carrying out such projects.

Your consultant holds that a negative Impact Report is suitable in that the General Plan itself is an administrative function and acts are exempt. It is the implementation itself that will require impact statements depending on circumstances and that further the EIR on this matter is merely the performance of a statutory requirement for administrative function. On the other hand a local General Plan or elements thereof (15037 (a)(1)) is a project for which an Environmental Impact Report is required.

Whatever the proper interpretation of the new law may be, the EIR which follows has been prepared in order to satisfy the State's guidelines in case an EIR is required.

B. DESCRIPTION OF PROJECT (15141)

The project is described in Chapter 1. of this plan document, a joint planning program by Solano County and the City of Rio Vista, with the same responsibility.

C. ENVIRONMENTAL SETTING (15142)

The landscape features are described in Chapters 8 and 18. The Delta - Central Sierra Drainage Basin boundary follows the Travis Air Force Base and south to Collinsville as part of the Sacramento Valley. The rolling Montezuma Hills with their non-irrigated pasture and grazing lands are a major environmental feature. The eastern border of the Planning Area is part of the Sacramento - San Joaquin Delta area.

The northeastern part of the Planning Area is comprised of flat lands with excellent agricultural soil and is being used for agricultural purposes. Chapters 9 and 19 describe in greater detail the landscape settings and characteristics.

D. ENVIRONMENTAL IMPACT (15143)

a. Environmental Impact of the General Plan

The General Plan is an instrument of goal setting and policy making to the end of assuring orderly development. It has been developed over 1 1/2 years of research, study, citizens input and goals & policy recommendations. In its very nature this General Plan report is already an Environmental Impact Report. The General Plan is meant to provide guidance to Solano County and the City of Rio Vista for orderly development so that adverse environmental effect will be avoided. That is one of the subjects of this plan document. In order to make the Environmental Impact Report a compact document, your consultant refrained from repeating the key discussions, Goals and Policy issues as described in the above General Plan Report.

Potential conflict may occur if in the future single development proposals are not fully screened by the Solano County or the City of Rio Vista. Both agencies adopted procedures for the environmental impact report process as applied to project applications.

The Chipps and Van Sickle Islands crossing from Contra Costa County connecting to State Highway Route 113 in Solano County passes through about 2 1/2 miles of wetlands on the two Islands. The location of this route was recommended by several agencies and is based on the expected intensive land uses in the greater Collinsville Harbor area. The existing vegetation on the Islands along the old railroad grade of the Sacramento Northern Railroad consists on Chipps Island mainly of Cattail, a plant with a relatively low salt tolerance, and relatively poor value to the waterfowl. Van Sickle Island's vegetation shows mainly a combination of pickleweed and alkali bulrush. Both plants show an adjustment capability to salinity and alkali bulrush is valuable for waterfowl and marsh management. Before the inclusion of the proposed transportation route in the State's "Corridor Study" in 1974/1975, an extensive environmental evaluation of the 2 1/2 mile route through wetlands must be prepared by the State. A possible loss of wetlands environment and wildlife habitat implied by the reuse of the old railroad grade of the Sacramento Northern Railroad would indicate that extensive mitigation measures would have to be considered. Included in the mitigation measures must be assurances which provide by policies and regulations:

- Requirement for continued application of exclusive agricultural zoning on Chipps and Van Sickle Islands;
- Requirement for the transportation corridor to be designed without any on- or off-ramps on the Islands;
- Requirement that all existing sloughs or waterways on the Islands be kept operative for flushing of waters.

The future construction of a deep-water port and entrance channel at the Collinsville site will present a new set of environmental questions. A suggested bulk terminal consisting of a wharf alongside the existing Sacramento Ship Channel and connected to shore by a pier extending over Chain Island was considered to minimize dredging and potential silting, however, this idea was discarded in favor of a marginal wharf along-shore with dredged approach channels because of the advantages of lower construction costs and shorter conveyor lines. An enclosed basin was not considered practical because of the problem of severe silting which would almost certainly ensue.

Any further in depth study by the U. S. Army Corps of Engineers' "West Coast Deep-water Port Facilities" must also include a greater involvement into the serious environmental question, into dredging and spoils disposal problems and into the impact of the relative nearness of the Suisun Marsh. These possibly adverse effects which may occur do not necessarily have to be a by-product of the harbor development. Included in the mitigation measures are policies and regulations which must be provided to give assurance which:

- Requires strict zoning and building control by the Port District in the visual design process of the facilities;
- Requires joint action by the Port District, the U. S. Corps of Engineers, Solano County Board of Supervisors and the Delta Area Planning Council in the management of the dredging and spoils disposal;
- Requires the Harbor District to visually screen the development in accordance with an overall landscape design plan.

Together with the Collinsville harbor development goes BCDC's adopted plan for water-oriented industries. Each specific industry applying for a permit to operate has to develop an Environmental Impact Report and at that time each specific application must be evaluated in relation to mitigation of any potentially adverse effect on the natural environment.

Pacific Gas and Electric Company is progressing towards the construction of a power plant. The State of California through the Resources Agency defined objectives and principles regarding location and operation of power plants. The U. S. Atomic Energy Commission controls the construction of plants by permit. Chapters 7 and 8 discuss the subject of environmental impact, also Chapter 5, p. 6. Since parts of the Sacramento River frontage have recreational value, P. G. & E. will develop parts of their site for recreational use.

b. Any Adverse Effects which cannot be Avoided if the Proposal is Implemented.

One of the purposes of the preparation of this General Plan is to avoid development which has or may have a potentially adverse effect on the environment. It is on the local level at the time of specific public or private project applications, that the specifics of an e. g. production method or other effect may be judged according to Solano County's and the City of Rio Vista's Environmental Impact Report Process.

As with the P. G. & E. plant, it can also be assumed that the other industries wanting to locate along the last remaining areas with water-access may not be in need of the entire shoreline of their site. These questions are to be considered at the time of evaluation of the EIR for each specific project singly.

Adverse visual environmental impact - if any - can be minimized by a planting strip along the whole waterfront "Screening of Industry", as prescribed on the Map "Land Use & Circulation, 1990". Also the prescribed "Suisun Marsh Transition Area" along Montezuma Slough helps to avoid possible adverse effect.

The City's industrial areas are surrounded by landscape buffer strips (Chapter 15, p. 11).

The questions related to "Environmental Concern" related to industry are discussed in greater detail in Report No. 5 "Economics and Population" pp. 2-18 to 2-21.

c. Mitigation Measures to Minimize the Impact

This plan document prescribes policies and recommendations which provide substantial coverage of mitigation tools.

d. Alternatives to the Proposed Action

Preparation of General Plan Elements is mandated by State Law.

Alternatives of higher population growth in the Planning Area has not been reflected by citizens input nor by the Steering Committee or the County Planning Commission.

Lower population alternatives for the City of Rio Vista must stand the test of the time, because growth is expected. The population increase in the City's urban growth area will provide social and economic benefits which may enhance the quality of life.

e. The Relationship between Local Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity.

The very nature of this mandatory General Plan is to discourage any short-term use which may adversely effect long-term productivity.

f. Any Irreversible Environmental Changes which would be involved in the Proposed Action should it be implemented.

The policies expressed in the General Plan have been designed to avoid any irreversible environmental change, e. g. first class agricultural lands to remain for agricultural use only.

g. The Growth-Industry Impact of the Proposed Action.

The expressed policy in this plan document is to provide areas for manufacturing industry and recreation industry (Chapters 5 and 15).

D. ORGANIZATIONS AND PERSONS CONSULTED (15144)

Many organizations have been contacted during the planning process since March 1972. Report No. 6, December 1972, lists already 27 agencies on federal, state or regional level. All 10 interim reports were widely distributed and valuable input received. The "Preliminary General Plan, 1990" and the Environmental Impact Report was again widely distributed early July, 1973 and valuable comments were received and incorporated into the final report.

For general interest only, the names of agencies and persons are printed below. First of all many citizens have been regularly consulted, their names are given in the beginning of this Report.

Federal: *U. S. Department of Housing and Urban Development;
U. S. Office of Emergency Preparedness, Region 9;
Department of the Air Force, Travis Air Force Base;
U. S. Army Corps of Engineers;
U. S. Department of Agriculture, Soil Conservation Service, Dixon;
U. S. Department of the Interior, Bureau of Reclamation;
U. S. Department of the Interior, Bureau of Sport Fisheries & Wildlife;
U. S. Department of the Interior, Geological Survey;
U. S. Department of Commerce:
National Oceanic & Atmospheric Administration
Environmental Protection Agency;
Travis Air Force Base, Base Engineer's Office;
Federal Aviation Administration.

California: Council of Intergovernmental Relations; *Division of Oil and Gas;
Department of Public Works; Business and Transportation Agcy;
*Reclamation Board; Department of Parks and Recr. ;
Air Resources Board; Department of Fish and Games;
Division of Highways, District 10; Office of Planning and Research;
Regional Water Quality Control Board; Department of Aeronautics;
*Department of Water Resources; *Division of Forestry;
*Division of Mines and Geology; *Department of Conservation.

State Office of Emergency Services, Planning Research Center;
California Legislature, Joint Committee on Seismic Safety.

Regional: Association of Bay Area Governments;
Bay Area Air Pollution Control District;

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